AMERICAN BEE JOURNAL.

EDITED AND PUBLISHED BY SAMUEL WAGNER, WASHINGTON, D. C.

AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

VOL. V. **FEBRUARY, 1870.** No. 8.

[For the American Bee Journal.]

Experiences, Observations, Experiments, and Results.

The readers of the Journal will recollect that, in the fall of 1868, I put thirty-three colonies of bees in winter quarters, and also one queenless stock which had been reduced to about a pint of bees. Some of the said colonies were badly reduced in numbers on account of the unfavorable season. However, all wintered, and wintered well, with the exception of two strong ones, which I came very near losing about the first of March, with what some people would call constipation. This was in consequence of those two colonies having a large quantity of sumac honey, which is of a peculiar bitter taste and a very waxy nature. The remedy I used was to give each of them a couple of cards of good honey from other colonies. This sumac honey answers a good purpose at any time when the bees can fly out; but is injurious if consumed when they are confined to their hive for any length of time.

On the 24th of March, 1869, I commenced setting out my bees. Every colony was thoroughly examined, and I found two with two queens in each. One of these queens had apparently just been hatched, as the cap of the cell was still attached to one side of it, and she looked very young. The other two queens were both fertile, and I took one of them away to supply the little queenless colony. This made an increase of one swarm during the winter. I think this queenless stock, consisting of only about a pint of bees, was a fair test of my plan of ventilation. I will here also remark that, from observations made in the last two years, I am satisfied that when we come to investigate the matter closely, the presence of two queens in one hive will be found not to be so rare an occurrence as was formerly supposed. I could give several instances which came under my own notice within said time.

After setting out the bees, equalising stores, &c., I commenced feeding wheat flour, and they worked on it for thirty days in succession, with the exception of two days, when confined on account of a light snow. They began carrying in pollen on the 17th of April, though they still kept at the flour a while longer. On the 18th they carried in a considerable quantity of honey from elm tree blossoms, and pollen from the willows and poplars. In this time the thirty-four colonies used up nearly two hundred pounds of flour.

I kept on equalising brood and honey, and on the 20th of May had every colony in excellent condition. Here I will give my memorandum, just as I find it in my diary:

April 18.—Bees gather large quantities of pollen and some honey from rock elm blossoms.

April 26 and 27.—Cold rain.

May 6 to 10.—Rock or sugar maple in full bloom, with excellent weather for bees.

May 11.—Early wild plums and wild red cherries in bloom; weather excellent. Then follows a succession of cold rains, from the north, to the 6th of June. Thus we lost nearly all the benefit of the wild plum and wild apple blossoms.

June 8.—Nearly every colony has commenced preparations for swarming. Though not one of them had gathered sufficient honey at any time to build a particle of comb, yet they kept up brooding to the highest point. I bought four swarms from a neighbor, and several hives of empty comb. On the 18th of May I allowed an Italian swarm to issue, and gave it a hive furnished with empty comb. On the 11th I allowed a swarm of mixed blood to issue, and gave it likewise a hive supplied with comb. On the 18th I was compelled to commence feeding all my blacks and bees of mixed blood; and continued feeding more or less for thirty-five days in succession. Our sumac was all blighted, and so were the basswood blossoms, which are our main dependence for bee pasturage in July. The basswood produced abundantly from the 24th to 28th of July—just three days. August was good; September was better; yet a great proportion of the black bees perished in midsummer for want or food. One of my neighbors had nine colonies last spring, and has now one good and two poor ones; another had six, and now has three; a third had thirteen, and now has three; while a fourth had three stocks of nearly pure Italians, and now has seven, though he lost two swarms by flight. He also returned five or six swarms to their parent stocks. They kept issuing up to the 10th of September. To my own Italians I did not feed a

particle, with the exception of their using their share of the flour in early spring.

All this time, while the blacks and the mixed bloods were starving unless fed, my Italians were rearing brood in abundance, and would have swarmed if I had allowed it; but they did not gather enough to induce them to build a particle of comb. If away from home two days, I would find my blacks and mixed bloods helpless on my return; and one strong stock, which by some hocus pocus happened to be overlooked, was on the third day found dead past redemption. In the whole forty stocks, Italians and all, there would on some mornings not be a single ounce of honey; yet, in the evening, the Italians would have three or four hundred cells filled with the shining nectar. My black swarm, that came out on the 11th of June, I returned to its parent stock after feeding it fifteen days, as the parent stock had lost its queen. The Italians, that came out on the 10th, filled their hive and stored forty pounds of excellent surplus honey without a particle of feeding.

This was the worst season for queen-raising that I ever knew. Out of one batch of thirty young queens I had four that were partially fertilized, three drone-egg laying queens, and four barren ones—all the rest were lost. Now, you will want to know about the partially fertilized ones. Well, they laid all their eggs in worker cells and in regular order; but a large proportion were drone eggs, and all mixed promiscuously—say two or three, and sometimes five or six workers, and then from eight to ten, or at times from fifteen to twenty drones; and occasionally a solitary worker entirely surrounded by drones, and *vice versa*. Among this lot of queens I had one that laid an abundance of eggs, but not one ever hatched! I kept these partially fertilized queens forty-five days, and their worker-egg laying ability regularly diminished, and ultimately failed altogether.

My disposition to experiment cropped out in full force during this time of scarcity; and I will give the reader the results, without going into detail:

First.—I found that a strong colony, while breeding rapidly, consumes two quarts of sweet water per day.

Second.—That sealed brood, not mature, introduced into a strong stock fed just sufficient to keep the bees alive, would perish and become putrid in three days.

Third.—That queens started in such circumstances did not mature under eighteen or twenty, and in one case twenty-four days.

Fourth.—That eggs introduced into a strong colony fed barely sufficient to keep it from starving, would not hatch until the bees commenced gathering honey, or until they were fed more plentifully.

Fifth.—That a colony deprived of its queen during such time of scarcity, and while there was no brood in the cell, could not be induced to accept a queen cell in any other manner than by introducing eggs, larvæ, and unsealed brood, and feeding them abundantly for forty-eight hours. Then the queen cell would be accepted. Under other circumstances I kept colonies without a queen eight days, and the cells would be destroyed, in every instance, soon after being introduced.

The result of the season's operations is that I have made a miserable, and I may say an almost total, failure in my endeavor to Italianize all my stocks. My blacks and mixed bloods have been a bill of expense to me; and I have had to use all the force and energy of my Italians to get my other stocks into wintering condition. Two stocks of Italians that I did not allow to swarm, and from which I took very little brood, have stored, the one thirty-five and the other forty pounds of surplus honey. My Italians are all extra heavy; while the blacks and mixed bloods, after all my feeding and strengthening, are only in fair condition, and some of them rather indifferent. What I mean by my mixed bloods is, a majority of them are *two-striped*. My workers from pure queens, or queens reared from pure mothers and fertilized by impure or black drones, have required very little feeding; but those raised from impure mothers, or the two-striped fellows, were the greatest pests, as robbers, I ever saw. They intruded into the house, into the pans of milk, on the table, into your pies, sauce, and everything eatable. They even endeavored to rob the pure three-striped Italians, and were eager to rush into all manner of mischief; whereas I would almost warrant a pure colony to mind its own business. I will remark here that I think it is the impure Italians that have given the pure their bad name for robbing, &c. The reason why I have kept such fellows heretofore was because prominent bee-keepers have informed me that on the whole they considered them the most profitable; and the seasons of 1867 and 1868 had almost convinced me that they were correct. But this season has got me altogether out of conceit of the little rascals. Mr. H. Faul, of Council Bluffs, thinks I may have queens to sell. Well, I will sell him some of those hybrids mighty cheap next spring, since he likes them so well and I do not; or I will trade with him for pure ones. (See what he says about Gallup in one of the back numbers of the BEE JOURNAL.) Understand that I am by no means discouraged; for if I have gained nothing else, I have become satisfied on some points that I have long felt an interest in solving for my own satisfaction. See my second statement above. I have long thought that brood perishing as there stated, in consequence of a lack of animal heat, might be what some people call foulbrood, or might be the cause and source of that disease.

ELISHA GALLUP.

Osage, Iowa.

[For the American Bee Journal.]

Pollen as Bee Feed.

MR. EDITOR:—I beg leave to clip from our country daily, if you think it worth insertion in your columns, the following article on bee feeding:

FEEDING BEES.

"It is sometimes very difficult to enable bees to live through the winter, owing to the exhaustion of their store. The bee-bread is their special feed, and that is decidedly better for them than the pure, liquid honey. It appears to be

more nutritious, and the same quantity sustains them longer. They do not feed upon the honey till the bee-bread is consumed. When they do begin upon the honey they devour it very rapidly. The following experience may be of advantage to apiarians:

"Some years since, during the latter part of winter, the bees were discovered to be dying. No cause could be detected for some time. In the loft of the kitchen there was a quantity of the honey locust. One day the bees were seen falling from the garret to the floor beneath. This suggested the idea of their trouble. They were perishing for food, and had found the locusts, and were trying to feed upon them. Closer examination showed that they were very week and poor, appearing unusually small. The spring was so near at hand with its flowers that they did not need to be pensioners long. They were saved with the following food: Water, sweetened with molasses, dried fruit stewed and cut into small pieces, and put in the water. Take out the empty comb carefully and fill it with this, and put it in the gum or near the entrance. The little creatures seemed to appreciate the kindness that saved them in their extremity. They would gather around the kind friend as their little repast was brought to them, just as chickens gather about the one who feeds them, and they showed no disposition whatever to sting their rescuer. As soon as the season opened they ceased to run to the hand that fed them, preferring to go abroad and glean a support by their own industrious toil. The necessity of regularity in feeding was proven in this case. The molasses being consumed, one day passed before any more was obtained. Intermitting the feeding that one day caused the loss of one hive. By the use of two gallons of molasses thirteen hives were saved through the famine until the opening season rendered them self-supporting. They didn't need to be fed long."

The idea is not entirely new to me. I have always had my doubts whether bee-bread or pollen, collected in such large quantities in the hive, should be used merely to nourish the embryo bees or to facilitate the elaboration of wax, and whether bee-bread did not also enter for a good share in the daily food of the bees in the hive. Is not the want of it the cause of dysentery during the latter days of winter, after the store of bee-bread has been exhausted in the hive? Swarms with plenty of honey, but destitute of bee-bread or pollen, will not thrive or winter well. Let practical and observing bee-keepers study and experiment, and report to the BEE JOURNAL their further investigation on the uses of pollen in the hive.

JOHN N. ROTTIERS.

Lafargeville, N. Y.

[For the American Bee Journal.]

Trials and Queries of a Beginner.

MR. EDITOR:—I have for a long time promised myself to write something for the BEE JOURNAL, but have often found that, like other promises we hear of, they are made to be broken, though I have made up my mind for once to keep mine—so here goes. To begin, I will give you an abridged biography. I was born in the year 1836, and consequently am in the large side of thirty-three years old. I am a native of New York State; removed West in 1844; received my early training in a fruit and ornamental garden, but for the last fourteen years have been engaged in mechanical business (a mason by trade); stand five feet nine inches in boots; weigh one hundred and fifty-nine pounds; in temperament am always ready to receive truth, but not credulous enough for theories to go down without evidence; am a great lover of honey, and an enthusiastic admirer of the honey-bee. But, Mr. Editor, this is as much as—perhaps more than—will interest your readers; so I will try and give a little of my experience in bee-keeping.

Having, as I supposed, a splendid offer of a swarm of bees in a barrel, I bought them, paying the very moderate sum of thirty dollars ($30) for them. They were very heavy, and some of my bee-keeping neighbors assured me that I should without doubt get four or five large swarms from them that year. This I believed, of course; brought them home, with high hopes of a "honeyed future." But, alas! that we should all be doomed to disappointment. You may imagine how eagerly I watched them night and day, and with what pleasant anticipations I looked forward to the time when the first swarm (of the dimensions of a two-bushel basket, or more,) should make its appearance. In the meantime, I had expressed to some of my bee-keeping neighbors my determination to send for "Quinby's Mysteries," which I had seen advertised in the *Agriculturist*. This, of course, displeased them very much, for it gave evidence of two facts: 1st, that I was losing confidence in their counsel; and 2d, that I was determined not to fool away my time and money running after new "Mysteries and Isms." However, Quinby came to my relief in time to assure me that I need not look for an endless number of "large swarms" out of my old barrel. Also, that it was useless to try to get them to colonize themselves in empty boxes, at sides and rear, connected with the main hive by tin tubes, &c.; of which facts I had become pretty well satisfied already.

You may guess that I soon made up my mind that I knew very little about bees, and I lost no time in telling my boasting neighbors that they knew less than I had given them credit for. I immediately went to work and made a frame hive with nine frames of the Quinby pattern (for I then considered him thoroughly posted on bee matters, and of course must be correct as regards form of hive as well as theory); and on the 7th of July, in the evening, after it had got dark enough that the bees could not see to sting, I went at them with hammer and tongs, &c., and sometime before daylight next morning had robbed them of all their honey and got them in my empty hive, with a few pieces of worthless comb, *guessing* they were all right. But, to all whom it may concern, I may certify that that job effectually cured me of all desire to handle live bees in the dark. The summing up of the matter was that I had about sixty pounds of poor honey, eight pounds of wax, and a large swarm of bees in an empty frame hive; with a countenance so disfigured next day that my friend's didn't "know

me." If the remainder of the season had been unfavorable this would probably have been the end of my experience in bee-keeping; but fortunately the weather subsequently proved to be favorable, and at the close of the honey harvest I could make the following footing up:

BARREL OF BEES,	CR.
By 60 lbs. honey from swarm	$15 00
" 90 " choice box honey	31 50
" 8 " wax	3 20
" Swarm No. 1 in frame hive	10 00
Total	$59 70

BARREL OF BEES,	DR.	
To cash paid	$30 00	
" new hive	2 00	32 00
Balance, profit for the season		$27 70

Thus you see that after all I had nothing to complain of with the footing up of the season's work with one swarm. But what I valued more than all the rest was that I had learned some valuable lessons—the best of which was that I was ignorant of the habits of the honey-bee, and that the necessary knowledge was within my reach.

My experience in bee-keeping only dates back four years; but I am still determined to press forward in the good cause (as they say at meetings), feeling myself well paid for my trouble in the pleasure if there were no profit in the business. The last two seasons have been very unfavorable for bees in this locality; yet, so far as I am acquainted, those that had a reasonable chance have yielded a fair profit this year.

Now that I have given a pretty thorough account of my first year's experience, I will notice a case or two that came under my observation the past season, and would like to have some one that is thoroughly posted furnish an explanation.

About the first of June I formed two nuclei by placing in small hives, each, a frame of brood and adhering bees, and setting them away in a dark cellar for three days. In due time I examined them, and found in one three fine looking queen cells, nearly ready to hatch; in the other I found none—the bees having evidently neglected to start one. I then went to the one that had the three and carefully removed one, giving it to the other that had started none. On examination next day I found this cell destroyed. I then gave them a comb containing eggs and larvæ. Three days later I examined them again, and to my surprise could find nothing that looked like a queen cell. I was then called from home, and on my return I opened my nucleus and found a queen cell torn open at the side, the embryo queen having evidently been destroyed. On looking a little further I found a very diminutive black queen, with unmistakable signs of having just mated with a drone. This was eleven days after the brood comb was given them, and eight days after I examined and could find no cells. In two days more this queen was depositing a few eggs. Meantime, my other young queen had commenced to lay freely. I then divided a full stock and set the new swarm on the old stand, without a queen—having left the queen in the old stock, which I removed to the stand of another strong stock transferred to a new place.

As soon as the new swarm exhibited signs of queenlessness I went to the nucleus that contained the good queen and looked for her, to give to my new swarm; but just at that time she did not propose to be found. So I gave up the search, and went and caught my dwarf and placed her in front of the new swarm. But she did not deign to go in, but took wing, and away she went. I then went to the other nucleus, found the queen, and gave her to the swarm. Next morning both the nuclei were in commotion, and were evidently queenless. The following morning, being the second day after I removed the queen, I again examined the nucleus from which I had taken the perfect queen, and found the bees had built a few inches of drone comb, which was nearly filled with eggs. I also found my little black queen, or her ghost, as quiet as though she had always belonged there. A few days later she was laying worker eggs again, and continued to lay worker eggs the rest of the season. For experiment, I am trying to winter her in her nucleus. Question 1st. Was she one of Gallup's eight-day queens? and, if so, had she failed when she commenced to lay drone eggs, and was she fertilized or revived in some other way? Question 2d. Where had she kept herself for at least twenty-four hours, before she found the other nucleus? I am aware that some will say I was mistaken about this being the same queen; but my evidence is so good that you will not make me doubt it.

The other case is as follows: About the 25th of September Mr. W. H. Furman, of Cedar Rapids, Iowa, was at my place with two Italian queens. One of these we gave to a full stock, the other we inserted in a small nucleus (from which I had just taken the queen) to keep her over night. The night was cool, and the bees did not cluster around the queen. The consequence was that the queen and her attendants were so chilled in the morning that they could scarcely move a leg. We warmed and revived her, and then inserted her in a black colony. Three days later I examined, and found both these queens laying freely. In two weeks I found brood in both hives, in all stages, and saw both queens. About three weeks after I introduced the queens the weather turned so cold that I took my bees in. After they had been in the cellar for near two weeks we had a day so warm and fine that I took these two swarms out, to see the young Italians fly. From the one a goodly number of nicely marked Italians flew; while from the other, which contained the queen that had been chilled, not an Italian bee flew out. I then made a careful examination and found the queen as yellow as ever, but not a bee could I find in the hive with even a mark of a hybrid. Query. Did the chilling of this queen cause her eggs to hatch entirely black bees?

But I have already spun my yarn as long again as I intended when I began, and will close by wishing success to the BEE JOURNAL.

J. E. BENJAMIN.

Rockford, Iowa.

[For the American Bee Journal.]

How to Cleanse Mouldy Comb.

A mouldy comb, if not rotten, may readily be cleansed in the following simple manner: First, hang it up till it is thoroughly dry; then brush off as much of the mould as possible without cutting or mutilating the cells. When so prepared, put it right into the cluster of a strong stock of bees, in the working season, and in the course of a week or so the bees will usually cleanse and renovate it so completely that, to all appearance, its former mouldiness will be gone. If, however, a portion of the comb should contain bee-bread that has become hardened and turned white in the cells, this the bees will sometimes fail to cleanse, or will occasionally cut away the entire cells instead. In either case of failure, such portions should be cut out and the vacancy filled with worker comb, to prevent the bees from building drone cells instead.

By the above method I have had some combs cleansed that had been literally covered over with mould. For the want of a better place I have, for the last fifteen years, usually wintered some of my bees in a damp cellar; hence my experience with mouldy combs.

Permit me to correct the following error in a previous communication. The cleats on side No. 2 of my common entrance-blocks to the Langstroth hive are three-sixteenths of an inch thick. The types makes me say "the sixteenth of an inch thick." See page 118 of the December number of the present volume of the BEE JOURNAL.

HENRY CRIST.

Lake P. O., Ohio, Jan. 4, 1870.

[For the American Bee Journal.]

Experience of Another Beginner.

DEAR JOURNAL:—I will now contribute my first effort for your numerous readers, giving my experience in bee-keeping. In 1866 I purchased five colonies (black bees) of one of my neighbors, I furnishing the box hives. In the following winter two of them died, leaving me three stocks for a start in 1867.

Being a novice in apiculture, I was puzzling my brain how to proceed, for failure was the general cry with the most of those who were in the business, and who were using only the common hive, or, worse still, some worthless patented substitute. While in this state of mind, I read in the *Chicago Tribune*, a communication from "RURAL," giving an account of his visit to the apiary of J. M. Marvin, of St. Charles, Ill., describing his mode of management, the Langstroth hive, and the Italian bee. I immediately visited Mr. Marvin, who received me very kindly, and I am much indebted to him for valuable information in the treatment of bees. He used the Langstroth hive, and had about three hundred colonies, mostly Italians. That season, I think, he discarded the blacks almost entirely. There I saw the Italian bees for the first time. I purchased from him an Italian queen and six Langstroth hives; came home; divided my three colonies—thus increasing them to six, all in Langstroth hives. The following winter I put them in my cellar, and they came out all right next spring. In 1868 they increased to twelve stocks; but only four of the twelve gathered sufficient stores for wintering. One of them died before I discovered their weakness and want. The seven weak swarms I brought through by feeding. On the first of January, 1869, the weight of the eleven stocks, exclusive of their hives, was respectively as follows: 30, 30, 22, 21, 14, 11, 11, 10, 9, 9, 8 lbs. So with these eleven Italian colonies I began this year; they using up about a bushel of rye flour and oatmeal in March and April.

Now for the result. They gave me one thousand and twenty-five (1025) pounds of surplus honey, and sixteen new swarms. My twenty-seven colonies are nicely put away in my cellar, all right. I am a regular subscriber to the AMERICAN BEE JOURNAL, and it *pays*. More anon.

W. W. HENRY.

Mendota., Ill., Dec. 1869.

[For the American Bee Journal.]

Novice.

DEAR JOURNAL:—Our bee house is of course inhabited by this time, by half a million or so of our little yellow pets, and we are happy to say that, so far, it answers the purpose admirably. We put them in on the 20th of November, and as the weather was since, we feel sure that it would have been a great gain to have housed them about a month sooner. The day we put them in happened to be quite cold, and as we did not want the caps on, we left them on their stands. Most of the stocks behaved quite well; but two of the hybrid colonies made up their minds evidently that they would stay where they were. They had been extremely cross all the season, and that day *positively objected* to any assistance of any kind. From one of them we removed the honey-board, thinking that the freezing air would drive them down among the combs; but after leaving them thus till after all the rest were removed, we decided that they must be treated like refractory children, and put in by main strength.

We are not in the habit of being intimidated by bees, but the battle array on top of the frames was rather fierce-looking; and when we approached they came more than half way to meet us, like a young hailstorm. Smoke was of no use then, as they seemed to be all out of the hive before we got within ten feet of them; yet we tried it, and think that, for almost the only time, the fumes of tobacco seemed to have no terrors for them. We might smoke them until they lay on their backs, and the moment we stopped blowing, they pitched in with fresh vigor, and finally, when we lost all patience, and carried the hive in, and let the bees come along or stay as they liked, we had about the fairest exhibition of real hybrid bee *fury* that perhaps is ever displayed. They buried themselves in our shoes, trowsers, coat, vest, hair, collar, waistband, and everywhere else. They did not any of them get lost, as they were so busily engaged in bestowing their whole attention to our precious self. Thus we all got into the bee house; but instead

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[For the American Bee Journal.]

How to Cleanse Mouldy Comb.

A mouldy comb, if not rotten, may readily be cleansed in the following simple manner: First, hang it up till it is thoroughly dry; then brush off as much of the mould as possible without cutting or mutilating the cells. When so prepared, put it right into the cluster of a strong stock of bees, in the working season, and in the course of a week or so the bees will usually cleanse and renovate it so completely that, to all appearance, its former mouldiness will be gone. If, however, a portion of the comb should contain bee-bread that has become hardened and turned white in the cells, this the bees will sometimes fail to cleanse, or will occasionally cut away the entire cells instead. In either case of failure, such portions should be cut out and the vacancy filled with worker comb, to prevent the bees from building drone cells instead.

By the above method I have had some combs cleansed that had been literally covered over with mould. For the want of a better place I have, for the last fifteen years, usually wintered some of my bees in a damp cellar; hence my experience with mouldy combs.

Permit me to correct the following error in a previous communication. The cleats on side No. 2 of my common entrance-blocks to the Langstroth hive are three-sixteenths of an inch thick. The types makes me say "the sixteenth of an inch thick." See page 118 of the December number of the present volume of the BEE JOURNAL.

HENRY CRIST.

Lake P. O., Ohio, Jan. 4, 1870.

[For the American Bee Journal.]

Experience of Another Beginner.

DEAR JOURNAL:—I will now contribute my first effort for your numerous readers, giving my experience in bee-keeping. In 1866 I purchased five colonies (black bees) of one of my neighbors, I furnishing the box hives. In the following winter two of them died, leaving me three stocks for a start in 1867.

Being a novice in apiculture, I was puzzling my brain how to proceed, for failure was the general cry with the most of those who were in the business, and who were using only the common hive, or, worse still, some worthless patented substitute. While in this state of mind, I read in the *Chicago Tribune*, a communication from "RURAL," giving an account of his visit to the apiary of J. M. Marvin, of St. Charles, Ill., describing his mode of management, the Langstroth hive, and the Italian bee. I immediately visited Mr. Marvin, who received me very kindly, and I am much indebted to him for valuable information in the treatment of bees. He used the Langstroth hive, and had about three hundred colonies, mostly Italians. That season, I think, he discarded the blacks almost entirely. There I saw the Italian bees for the first time. I purchased from him an Italian queen and six Langstroth hives; came home; divided my three colonies—thus increasing them to six, all in Langstroth hives. The following winter I put them in my cellar, and they came out all right next spring. In 1868 they increased to twelve stocks; but only four of the twelve gathered sufficient stores for wintering. One of them died before I discovered their weakness and want. The seven weak swarms I brought through by feeding. On the first of January, 1869, the weight of the eleven stocks, exclusive of their hives, was respectively as follows: 30, 30, 22, 21, 14, 11, 11, 10, 9, 9, 8 lbs. So with these eleven Italian colonies I began this year; they using up about a bushel of rye flour and oatmeal in March and April.

Now for the result. They gave me one thousand and twenty-five (1025) pounds of surplus honey, and sixteen new swarms. My twenty-seven colonies are nicely put away in my cellar, all right. I am a regular subscriber to the AMERICAN BEE JOURNAL, and it *pays*. More anon.

W. W. HENRY.

Mendota., Ill., Dec. 1869.

[For the American Bee Journal.]

Novice.

DEAR JOURNAL:—Our bee house is of course inhabited by this time, by half a million or so of our little yellow pets, and we are happy to say that, so far, it answers the purpose admirably. We put them in on the 20th of November, and as the weather was since, we feel sure that it would have been a great gain to have housed them about a month sooner. The day we put them in happened to be quite cold, and as we did not want the caps on, we left them on their stands. Most of the stocks behaved quite well; but two of the hybrid colonies made up their minds evidently that they would stay where they were. They had been extremely cross all the season, and that day *positively objected* to any assistance of any kind. From one of them we removed the honey-board, thinking that the freezing air would drive them down among the combs; but after leaving them thus till after all the rest were removed, we decided that they must be treated like refractory children, and put in by main strength.

We are not in the habit of being intimidated by bees, but the battle array on top of the frames was rather fierce-looking; and when we approached they came more than half way to meet us, like a young hailstorm. Smoke was of no use then, as they seemed to be all out of the hive before we got within ten feet of them; yet we tried it, and think that, for almost the only time, the fumes of tobacco seemed to have no terrors for them. We might smoke them until they lay on their backs, and the moment we stopped blowing, they pitched in with fresh vigor, and finally, when we lost all patience, and carried the hive in, and let the bees come along or stay as they liked, we had about the fairest exhibition of real hybrid bee *fury* that perhaps is ever displayed. They buried themselves in our shoes, trowsers, coat, vest, hair, collar, waistband, and everywhere else. They did not any of them get lost, as they were so busily engaged in bestowing their whole attention to our precious self. Thus we all got into the bee house; but instead

of taking their places orderly in a row, as we had planned they should, and *very particularly desired they shou d just then,* they kept pitching in more furiously than ever, until we began to think we should a "leetle rather" take a "back-seat," and be a spectator awhile.

Well, these bees raised such a "howling" that we really began to fear that our bee-house was going to be anything but quietness; and the other colonies seemed to be rapidly getting demoralized as well. We left the door open on cold nights, until the thermometer went down almost to freezing; still they persisted in promenading constantly on the tops of the frames, and scolding away worse than a lot of "setting hens."

We read Gallup, but he advised more ventilation; and as we had the honey-boards off of the worst stocks, and the entrances all open, we did not know any better way to ventilate, unless we put them in the middle of a ten acre lot, with the bars down.

Finally, our business became so pressing at the approach of the holidays, that we positively had no time to see to the bees. (We had been visiting them once or twice every day.) And after they had been *neglected* about a week, we were surprised to find them quite orderly, although the cross rascals did "boil out over the top," as soon as we showed our phiz. (We are not bad-looking at all, Mr. Editor, as you will see by the photograph which we are going to send you, when we get a little older *in bees.*) We then went off in a huff, and shut them up in total darkness, for not having any better appreciation of our kindness to them.

Since then we have slipped in quietly about once a week, and for the last four weeks the thermometer has not varied one degree from 40°, although the weather outside has been cold and warm alternately; and once so warm for several days, that we could hardly understand how it could be so much colder inside. We do not think the sun produces any effect at all on the interior. The bees, in most of the hives, behave just as Mr. Gallup describes them. Were it not for their bright colors, and their moving when touched, we might think them dead.

Mr. Adair and some others, we think, claim that bees cannot be taught anything. Is not this a mistake? If they can be made cross, cannot they as well be made tame? Again, cannot they recognize their keeper? We have often had them taught to fly to us and light on our fingers, for honey which they had been in the habit of finding there; and a very few lessons of that kind will suffice to make them remember it for some time. We succeeded so well in arousing the ire of the colony mentioned, that they did not get over it for some weeks. Could they not be induced to remember kindness as long? Perhaps they would too much resemble human beings in that respect; yet we feel certain that we can, by direct experiment, show that bees recognise one person from another, and shall try something of the kind next season.

We should have remarked that our bees, so far, have consumed very little honey. With so little action going on among them, we do not see how they can eat much. It may be argued that there is consequently little brood being raised. This, we think, may be so; nor is it necessary there should be, for we have no bees dying off, as they do when kept out of doors—at least we do not discover any.

We always have, and fear we always shall "count chickens before they are hatched." So here goes: With forty-six stocks, having lots of bees and plenty of honey, won't we have an array of laborers in the spring? And won't we —— then! There, it is eleven o'clock at night, and we had almost forgotten that we are as yet only a NOVICE.

[For the American Bee Journal]

Responses and Remarks.

I have been repeatedly asked by correspondents, how is it that your doctors, (meaning bee doctors, of course,) disagree so much on various points? Whereas, the fact is we do not disagree so much as some suppose.

Mr. J. H. Thomas says, on page 228, vol. 4, No. 12, "If Gallup will quietly lay his piece of wire cloth over his bees, he will find what I say to be true." Now, the truth is, Mr. Thomas uses a different form of hive from mine, and lives in a different climate. I usually have more than half of my swarms so full of bees, that when I set them in the cellar, I raise up the hive at the bottom, on the front side an inch, and remove the honey board entirely, before I can get them in the semi-dormant state he speaks of. Even then the bees will be clustered from the bottom board up, and crowded on the top of the hive about an inch thick. After trying the wire gauze on a few such colonies, and destroying them as I have done, and at the same time wintering others with perfect success without the wire gauze, he would be very apt to come to my conclusion.

Vol. 5, No. 1, page 14, C. D. says, "Gallup's system of inside wintering, &c., applies to steady cold winters, and not to a changeable climate." It, however, does apply to a changeable climate, for our climate changes from 75° above to 30° below zero, in mid-winter. But the cellar must be properly ventilated, as well as the hives.

On page 15 of the same volume and number, C. F. Smith thinks "Gallup is mistaken," &c. But Mr. Gallup proves that Mr. Smith is mistaken. He has misquoted Gallup. I said that where bees did not have access to buckwheat they had died, (or, in other words, the disease has prevailed;) not that *all* had died. Putting in that word (*all*) alters the meaning altogether. My own bees did not have access to buckwheat, yet I wintered every swarm. But where they did have access to buckwheat, or were fed, in every instance that came under my observation, they were in excellent condition; or, in other words, there was no bee disease. Mr. Adair, in his Annals of Bee Culture, attributes the disease to diseased or decayed fruit, in his locality. That could not possibly have been the cause here, as we have no fruit of any description for the bees to meddle with.

On page 10 of the same volume and number, Mr. H. M. Thomas asks a question, and I an-

swer—yes, I have observed at least a dozen cases of the kind in my experience. I had one case last winter.

Mr. Aaron Benedict calls Gallup to task, in one of the back numbers of the JOURNAL, and others have called him an old fogy, &c. Now Gallup never said, or intended to say, that there could be no improvement in hives. But he cannot see the necessity or propriety of having those improvements patented. Why not give the benefit of those improvements, if they are improvements, to the public free of charge? In many cases, those so-called improvements are yet disputed questions; and many of them, (I do not say all,) look to me like mere quibbles to avoid Mr. Langstroth's patent. In a great majority of cases, the advantages claimed are only imaginary. Take, for example, the Diamond Hive. The advantages claimed over Mr. Langstroth's original pattern are real, without a doubt in my mind. Yet with the form of Langstroth hive, which I use, and with my method of managing it, the advantages would scarcely be perceived. But put a swarm in each, without any after care whatever, and I do not doubt that in a majority of cases the Diamond Hive would excel, especially in increase. But that kind of bee-keeping is, or ought to be, played out.

E. GALLUP.

Osage, Iowa.

[For the American Bee Journal.]

Stimulative Spring Feeding.

MR. MARVIN:—Will you be so kind as to give us your plan of stimulative feeding bees; giving the time of commencement, the quality of food, how often and what quantity at a feeding, and at what time of day you feed? Do you feed rye meal, and if so, how large a quantity, and at what time is it given? On how small a quantity of honey may a medium stock of bees winter, in the house, or in a cellar? I am of opinion that there is more in this feeding business, than is generally supposed or dreamed of by most bee-keepers. Be so kind as to post me in detail, either through the BEE JOURNAL or by letter.

E. R., *Wayne, Mich.*

It requires at least five pounds of honey to winter a stock of bees, containing an old queen, or one that has had work during the season, as she needs rest, and is not easily fattened, ready for the renewal of egg-laying; but the hive will bear to be looked to often on that allowance. A stock containing a young queen is not safe without constant watchfulness, and probably double the quantity of honey may be needed before spring, as the queen requires no rest, having done little or no work. It requires at least ten pounds of honey or feed, to sustain a hive of bees till spring in this section; and they should be watched closely, on that allowance, to see that they are not robbed, or need more before the flowers yield enough.

It will pay to feed a stock of bees all they can eat, but not all they can store, unless you can sell bees at a higher price than we can, at present, in this section. When the bees are taken out of the house, or spring opens, place dishes of unbolted rye or oat-meal in the apiary. If the neighbors have bees, and do not feed or care for them, and their stocks carry away half a pound, each, every working day, for five or six days, its equivalent will probably be brought back in honey, sometime when their stocks need the proper protecting care of a watchful bee-keeper. Some stocks do not need the feed, and some seasons no stocks need the artificial feed, and cannot be induced to take it at all. If any hive or hives need bee-bread, and the weather is bad, feed a mixture of diluted honey and rye, or oat meal mixed, or either separately; also, the middle of hard-boiled eggs mixed to a paste. Feed in a piece of old comb placed on the frames, or near the cluster of bees. Disturb or examine them often enough to have them eat all the feed given to them, and all they have in the hive; but do not let them lack food for even one day, as that would nearly spoil all the previous work, and involve the loss of the feed. Better have some stored, than have too little, as there may be a rainy day at hand.

A good liquid feed for spring use, need be only half and half sugar and water. The better the quality, the less odor to attract robbers. But as we feed only near night, and only what is secured by the bees of the hive fed, and all hives are equal in number of bees, it is not necessary to have more than a medium quality of sugar, as that is nearly as good for immediate use, and we want little or none stored in the cells, because we desire to have young bees raised in them. We want each hive of bees to eat, after being regulated for feeding—that is, by cleansing out the hives, equalising the bees, combs, and brood, and elevating the front end of the tight-bottomed hives, so that they will hold the feed poured in from the kettle in which it is boiled. As we boil the feed to the consistency of half sugar and half water, it runs under the combs, and the bees can stand on each side of the comb-frames and sides of the hive; and inside workers, as well as outside honey gatherers can and do clean up the spilled feed *instanter*. We have the best success by having the bees feed from the bottom of the hives, standing on their own combs, unless the air is too cold; then turn the feed directly in the cells out of a sprinkler, or a teapot. As we feed fifty or a hundred stocks half a pound each, every evening, the teapot or other feeders are too slow for us. If a hive takes less feed, we give it combs of brood, or bees from some other hive that can spare them. If there is a yield, or a partial yield of honey in the flowers, feed accordingly.

Next spring we shall have to disturb our bees, and feed them out of their own stores, to make room for young bees in the cells now occupied by honey and bee-bread. It is done by opening the hives often, uncapping a portion or all of the cells, as the case may be, and sometimes feeding diluted honey or feed. If there is any honey to interfere with brood-rearing, use the honey-emptying machine, and then feed the honey again, or its equivalent in feed, if needed.

It is best not to feed bees to stimulate breeding, unless it is carried out *until there is enough feed to be procured from natural sources*, the flowers, and those are continuous long enough to make it pay. We used to aim to have our

stocks extra strong only at the yielding of the clovers and bass-wood, (linden ;) but the increase of fruit-blossoms and dandelion (*taraxacum*) the last two years, has induced us to save the old bees and get the stocks on the swarming point, at least a month earlier. We want the experience of others on this branch of bee-keeping; and more on the hotbed and forcing house, or outside heating arrangements, as we have had but few experimental trials on outside stimulating; but enough to convince us there is profit in it, if properly managed.

We hope our friends will be kind enough not to pay Uncle Sam sixty dollars, or less, for a patent, when the probabilities are that half that sum cannot be obtained again, clear of expense. The word *patent*, keeps many from investing, or even making any improvement, for fear of infringing on some one's right. Had the honey-machine been patented, it would have kept the bee-keepers back at least ten years, and no person would have been benefited more than they may be now, by accepting and keeping up with the improvements made. We know of but few patents that pay to educate the buyer how to use them with success; and without such knowledge acquired, they do not generally succeed, till they have used up one or more of the articles, or got discouraged—saying the article is of no use, and thereby discouraging others from investing, to the detriment of the inventor, and the great disadvantage of the public.

J. M. MARVIN.

St. Charles, Ill.

[For the American Bee Journal.]

Trouble with Queen Cells.

MR EDITOR:—Will you, or any of your kind and numerous correspondents, tell me whether queen cells require to be inserted in the same position again as they were before removal, and how they should be fastened. The information would be important to me as well as perhaps to many others. Up to this time I never could find anything in any writings on apiculture very precise on this point. It is true, some state that the bees will sometimes destroy such inserted cells, and others again say that the bees will foster an inserted cell. Now, both these points have failed with me, but I am more particularly interested in the latter.

On examining a colony, I found that it had lost its queen sometime previous, as it contained queen cells sealed over, but neither eggs nor larvæ in the cells—nothing but sealed worker brood. I removed all the queen cells, as I had some sealed Italian queen cells in a nucleus box, and the colony I am speaking of were black bees. I took out a comb, cut a hole in it, just fitted to receive a queen cell taken from the nucleus box, and adjusted it nicely, so that, in fact, it fitted as naturally as if placed there by the bees. But these soon gnawed away all around it, so that I expected to see them make a still better job of it. But lo! they soon brought it to the bottom of the hive, and there, surrounding it, acted as though they did not mean to destroy it. So I took up the cell, and first cutting a little wedge out of the comb which held it before, cutting downward from the opening made by the first insertion, and put it between the crotch. The cell was now clear above and below, and attached only by its sides, as when cutting it out I had left it encircled by a course of worker cells. The bees acted just as before, and soon got the cell down on the floor again, though without mutilating it in any way. I was now almost at my wit's end; so I took up a piece of comb, three inches square, and cut out a hole to receive the cell again. After inserting it I had a wire-cloth cage so made that, put in the piece of comb with the cell, it just filled the cage, except leaving sufficient space for the bees to get to the cell between its sides and the comb surface. I now thought if the bees act as before, the cell will at least not fall to the bottom of the hive. They really did gnaw till the cell reached the bottom of the cage, by which time it was discovered that the inmate was dead, caused, I suppose, by the fall it received. I then procured another, and to keep it from falling also, I caged it in the same manner as before, leaving the narrow side open for the access of the bees. These acted as on the former occasion, gnawing away portions until they could go no further. Sometimes they would have the cell laying on its side, and then again standing on its end. In fact, they kept rolling and rocking it constantly, yet never mutilating it in the least, till the time when its inmate should have left the prison. It was then found to be dead. I now tried a third time, with no better success.

All this is, to me at least, exceedingly strange. Is there any special mode of introducing a queen cell that will *always* prove successful? If so, I should be very much gratified to be instructed how to do it, for future use. After these repeated failures, I gave the bees a piece of broad comb, inserting it in the same opening where the first queen cell was placed; they immediately fastened it well, and proceeded to rear a queen. Why would they not foster and use the sealed queen cell that was offered to them?

C. WURSTER.

Kleinburgh, Canada.

[For the American Bee Journal.]

Sugar Candy.

In the BEE JOURNAL for December, D. H. Coggshall inquires how sugar candy should be made for feeding bees. I always buy the common sugar sticks, sold by confectioners.

LIQUID BEE FEED, OR SYRUP.

I consider a thick syrup made of white sugar, fully equal to honey for bee-feed.

J. H. THOMAS.

Brooklin, Ontario.

Bees have about sixteen thousand eyes, or eight thousand in each of the compound organs placed laterally upon the head.

[For the American Bee Journal.]

Musings of the Evening.

The honey bee must be one of the special blessings conferred by God upon man; for we learn that when He, in infinite wisdom, did provide the means of salvation for His fallen creatures, He provided for John, the forerunner of Christ, the means of subsistence from the treasured stores of this most wonderful insect. Thus we read: "and his meat was locusts and wild honey." How conclusively does this show that the bee performed a noble part in consummating the plan of redemption!

The bee possesses many characteristics worthy of the imitation of man. It teaches lessons which, if obeyed, will advance man's interest morally, physically, mentally.

Morally, for the bee is an observer of every law given it by its Creator. *Physically*, for nothing so small is capable of laying up in store for the use of man so delicious a food; and its rights it defends with a power and skill that would astound any one unacquainted with the nature of this insect. *Mentally*, for in all her labors the bee manifests great wisdom. First, she gathers nectar from the flowers, secretes it through the pores of the skin, and thus forms scales of fat or wax, which, taken in small particles, is put together in a mechanical manner that defies the art of man; raising the temperature to eighty degrees Fahrenheit, and the pieces are sealed together into what is called *comb*. This most wonderful task completed, they next turn their attention to their mother; with some of this same nectar or saccharine matter mixed with the pollen of flowers, and partially digested in the stomachs of the female worker-bees. With this the mother is fed directly from the proboscis of the workers. Thus fed, her fertilized organs of reproduction stimulated by the food, she produces eggs just in proportion to the amount of food taken. See with what judgment the eggs are warmed and hatched, and the larvæ fed. Of the same eggs they are able to make some to "honor and some to dishonor." That is to say, they can feed the larvæ from one egg on a compound food, which makes that so fed to grow large, fully developing the female organs, and thus, in the imperfect judgment of man, entitling it to the name of "queen." But the name slanders the character of the mother bee; for in no case does she attempt to assume the position of a *dictator*. She simply assumes the duties of a mother, and is at all times and under all circumstances entirely subject to the will of the populace. The larvæ from another egg they feed on a different or less nutritious food, and sealing up the embryo in a cell that dwarfs it, or prevents the full development of the female organs. Hence the worker-bee is not capable of being fertilized, and is thus nominally no mother, but destined to be a servant of the household for life, which position she cheerfully accepts.

How like unto man, too! Nothing seems to afford so much pleasure as the storing up of treasure!

But, to their credit, be it no longer said that theirs is a *monarchial* government, for, among them, numbers universally rule, even to the putting to death of one that all creatures hold dear—the *mother*. They do not even suffer their own fathers to live, when their presence does not add to the wealth of the community. Still, the many lessons of industry and of mechanical ingenuity, together with their strict obedience to each and every law which God has given them for their government, are worthy the admiration and imitation of the most devout theologian or the profoundest philosopher.

JAMES D. MEADOR.

Independence, Mo.

[For the American Bee Journal.]

Wintering Bees.

MR. EDITOR:—As the winter season approaches, (and in fact it has been freezing with us ever since the middle of October,) it reminds us to look after the care of stock, to see that they have comfortable quarters, with a supply of food at command, because we understand that animal heat is kept up at the expense of food and exercise. Now, if we give them proper protection when not in exercise, they will require proportionally less food to maintain the required heat. This rule holds good with bees as well as other stock; and if they are weak in numbers and light in stores, they must certainly perish, here in the North, if they are not protected.

I became practically convinced of the advantages of protecting bees from cold, in the winter of 1866. Among my stock were eight stands in the American hive. The Bees, comb, brood and honey in them weighed only from six to eight pounds to the hive—the heaviest not exceeding ten pounds in weight. No practical bee-keeper should ever allow his bees to commence the winter so light as this, but I was then more engaged in medical practice than in apiculture, and had not watched them as closely as I should have done. I knew from former experience that they were too light to winter on their summer stands; but what was I to do? My village lot was too flat for a cellar, or even to trench, as Mr. Langstroth describes in his valuable work, so I did what any Yankee would do under the circumstances, that is, *I did the best I could!* I levelled the ground in a part of the garden, laid down two pieces of 4 by 4 inch scantling, eight inches apart, filled the space between and each side of them with straw, to absorb the moisture from below, set the eight hives on the scantling, close together, with cups and surplus boxes removed, and entrance open; drove a board into the ground at each end of the row of hives; laid a pole on top for a ridgepole, set boards slanting from the ground to ridgepole, each side; put a little straw over the boards to help shed the water, and covered all with dirt from six to ten inches deep—leaving the space around the hives under the boards vacant. I put them into these winter quarters Nov. 25, 1866.

They remained undisturbed until the third of January, when, it being quite warm for a week, I was anxious to know how the bees were getting along; so I opened one end of the cave and

crawled in. All was still as death, and I concluded my bees were surely dead; but when I rapped each hive they quickly responded. A truant mouse had tried to gnaw into the entrance of one hive. I supposed he was hungry and wanted something to eat; so I prepared a dish of *corn meal and arsenic*, and for his convenience, lest he should be thirsty after dinner, I set a dish of water handy, and closed the cave again. The bees were left thus till the 20th of March, when the frost was all out of the ground, and my other bees flying lively. I opened the cave, all was quiet; but the bees soon run to the door to see if it was indeed daylight. I set them on their summer stands, all alive and well, with combs clear of mould and in good order. Two large rats and about a dozen mice had dined on the prepared meal, and laid down to rest.

As the bees were gathering pollen from the willows and elms, I did not have to feed any in the spring to get them through. They filled up their hives during the summer, and were strong, heavy stocks in the fall, with nearly as much box honey as any of the rest of the hives.

I was satisfied that protection had saved these bees. I therefore, the next winter, built a house, fourteen feet by eighteen, weatherboarded and ceiled, with a ten-inch wall filled in with sawdust, floored overhead, with ten inches sawdust on top, and carpeted with four inches of sawdust. Two ventliating pipes, four inches by six, were inserted —one from the upper floor up; the other from top of sawdust, over the upper floor, down to within a foot of the bottom of the room. In this room we kept our canned fruit, apples, potatoes, cabbages and bees, for the last two winters, with success. I have just put them up in it again for the winter, except a few hives which I have left out for experiment. I am satisfied that protection pays.

Now, Mr. Editor, if you think this article will add anything serviceable to the already large correspondence in the JOURNAL on protection in winter, and thereby induce other *novices* to house or cave their bees during the cold weather in the North, you can put it in print if you like. So, hurrah for protection, the AMERICAN BEE JOURNAL and the successes of 1870! Enclosed find the needful for three old and three new subscribers.

A. V. CONKLIN.

Bennington, Ohio, Nov. 1869.

The entire economy of the hive seems to emanate exclusively from the two most prominent attributes of instinct—that of self-preservation, and that other more important axis of the vast wheel of creation, the secured perpetuation of the kind by the conservative and absorbing love of the offspring.—*Shuckard.*

"If you listen by a hive about nine 'colock, [on a summer evening,] you will hear an oratorio sweeter than at Exeter Hall. Treble, tenor, and bass are blended in richest harmony. Sometimes the sound is like the distant hum of a great city, and sometimes it is like a peal of hallelujahs."—REV. WM. C. COTTON.

[For the American Bee Journal.]

Bees in Jefferson, Wisconsin, in 1869.

I commenced wintering out the stocks of my home apiary on the 28th of March. They had, all of them, consumed a very small amount of honey, and came out nearly as strong as when put in the cellar. In most of the hives no brood was found, and those that had any, had very little. On the 3d and 4th of April a cold snow storm occurred, with a spell of cold weather for three or four days, during which time one of my strongest colonies perished for want of honey near the cluster, though having plenty of honey in the hive. This was the fourth colony I had lost out of three hundred and sixty-five, since wintering them in. Good, warm weather did not set in till the 16th of April, and a few days later the bees commenced bringing in some pollen. Between the 6th and 12th of May, large numbers of workers hatched, and everything relating to bees gave promise of a good honey season. On the 10th of May I found some colonies that had their hives full of honey, brood, and bee-bread to the last cell. They were very strong, and had built queen cells, so that it was evident they could not keep together long. But the weather became unfavorable again, and the bees could gather little from the blossoms of hard maple. On the 20th the weather changed, and the fruit blossoms furnished fine pasturage for the bees. My first swarm issued on the 29th, and on the 3d of June I had three more swarms. Nearly all my colonies had become strong by this time, and I had reason to expect numerous swarms. White clover never appeared more abundant, and was just getting into bloom, and there were fourteen acres of Alsike clover sowed within half a mile of my apiary which was also just beginning to blossom. Nearly every colony had a good supply of old honey, besides some lately gathered. If ever things looked promising, it was now, but, alas, the prospect suddenly changed. Cold wet weather set in, and rain fell on twenty-three days in June. Neither white clover nor Alsike yielded any honey. The swarms I got during the month of June had to be fed continuously to keep them from starving. They could build no combs, and all the progress they made was in rearing some brood in the combs I had given them. The stores of honey in the hives gradually disappeared, and about the 10th of July—the time when the basswood usually begins to bloom—I had to feed nearly one-half of my old colonies to keep them alive. But as all my stocks were quite populous by this time, I had not lost courage yet—the basswood might yet supply sufficient winter stores to my hungry colonies. There were, however, only a small number of trees that blossomed, and those yielded honey abundantly only one day, and less abundantly for only two days more. With the failure of the basswood blossoms vanished all prospect that the bees of my home apiary could gather a winter's supply. On examining a large number of colonies I became satisfied that not one had secured stores enough to carry them through the winter—having less than five pounds of honey per colony. It was now evident that I

would have to resort to some extraordinary means for their preservation. I concluded to do what I had never done before, namely, remove to different locations a large number of colonies. I hunted up buckwheat fields and commenced hauling one hundred and six colonies to the town of Oakland, half a mile from my home, where about sixty acres of highland had been seeded with buckwheat. There were about thirty-five colonies of bees in this neighborhood before. With the exception of six colonies, those which I took from home from the 6th to the 10th of August, had gained on an average fifteen and a half pounds in weight when I brought them back on the 20th of September. The last six colonies, which were taken there on the 24th of August, were the only ones that had not gained anything. Some very strong colonies gained more than thirty pounds in sixteen days. Fifty-seven colonies which I hauled to the town of Aztalan, northwest from my residence, and which had over twenty acres of buckwheat to work on, gained only on an average about seven pounds per hive. Most of the buckwheat here was sowed on low ground, and one day when looking after the colonies, I was surprised to see nearly all the bees flying in the direction of a four-acre lot sowed on high ground, while only very few of them went to the fine ten-acre field. The soil of this field was heavy clay; another parcel, of fifty-seven colonies, carried to a location only three miles west of my home, which had not much buckwheat to work on, gained about eight pounds per hive, on an average Of this lot, as well as of the former one, some hives had lost in weight,—the highest gain by any hive was seventeen pounds in the one lot, and eighteen pounds in the other. Twenty-five colonies, taken to the town of Hebron, about five miles from my home, in a southeasterly direction, set out in lots of ten and fifteen hives respectively, gained about eleven pounds per hive, on an average. Twenty-nine other colonies, removed three and a half miles, in an air line, south from my home apiary, and placed in the neighborhood of three acres of buckwheat and a large patch of thistles, gained eight and a half pounds per hive, on an average. Nine of these were removed thither on the 24th of August, and had not increased in weight. The average gain of all the colonies removed was ten pounds per hive, making a total of twenty-seven hundred and sixty-nine and three-quarter pounds, ascertained by actual weighing. The time spent in removing them and bringing them back was nearly four weeks, employing two men with a horse and wagon. Three colonies were smothered while being transported, as, in order to expedite the removal, we kept on hauling in day-time, in very hot weather, and those colonies were exceedingly populous. The bees clustered thickly on the wire gauze in front of the portico, creating immoderate heat in the hive and thereby melting down the combs.

By this experiment I have found that there is in different localities much difference in the yield of honey from buckwheat blossoms; that, at least in this season, it yielded most honey on high ground, particularly in sandy soil; that a distance of three or four miles may change a location from a poor to a good one; and that it pays very well to distribute colonies in various directions at a time when the pasturage is or is expected to be scant in proportion to the number of colonies to be supplied.

On examination of a number of colonies after bringing them home, I found that the strong ones had nearly all sealed honey, while the weaker had theirs mostly unsealed. Some of the latter lost nearly nine pounds each in weight from September 20th to November 10th; whereas none of the strong ones with sealed honey lost over five and a-half pounds. This loss was, of course, not all honey, as all the colonies had a considerable amount of brood when brought home; and the greater loss by the weaker ones was doubtless occasioned by the thin unsealed honey.

After feeding three hundred pounds of rock candy and two hundred pounds of coffee sugar, and uniting about thirty colonies, I think the two hundred and eighty-eight colonies of my home apiary have food enough to serve them till May. Then, if necessary, I shall feed them with honey, a supply of which I have still on hand from my last year's crop. I fear, however, that those colonies which I have been feeding will be troubled with dysentery, and that some of them may die before spring comes on, as they appear very uneasy at the present time, and the bees of some of them now discharge fæces outside the hive. This feeding was by way of experiment, which I hope I may not be compelled to repeat at any time during my life. I really do not believe in wintering bees that have not food enough in the fall to last them to the first of May.

While compelled to make so poor a report about the bees of my home apiary, I feel happy to say that those of my southern apiary are in much better condition. They not only needed no feeding last summer, but were constantly gaining a little in weight; so that, with the surplus which some of them gave, I could winter in every colony that was strong enough and had a good queen. I had one hundred and seventeen colonies in that apiary in the spring, and have wintered in one hundred and seventy-seven. The increase in number was nearly all by natural swarms.

One hundred and twenty-two colonies which I had in my northern apiary in the spring, increased to one hundred and eighty-nine—all of which I have wintered in. With the expenditure of about one thousand pounds of honey since spring, this lot is in a fair condition to winter. Twenty-eight additional colonies, which I keep in the town of Oakland, seven miles from my residence, are also in very fine condition for wintering.

ADAM GRIMM.

Jefferson, Wis.

It often happens that flowers which even contain within themselves the means of ready fructification cannot derive it from the pollen of their own anthers, but require that the pollen should be conveyed to them from the anthers of younger flowers. In some cases, too, the reverse of this takes place.

Bee Hives, &c., Patented in 1869.

Patentees.	Date of Patent.	Invention.
A. T. Wright	Jan. 5,	Bee hives.
Theron Webb	" 12,	" "
A. T. Wright	" 12,	" "
Jno. Wood	" 12,	" "
B. F. Lee	" 19,	" "
C. R. C. Masten & A. D. Van Vleck	" 19,	" "
T. S. Engledow	" 19,	" "
Wm. Black	" 26,	" "
Jesse Pearson	Feb. 2,	" "
James D. Meador	" 2,	" "
David S. Gray	" 2,	" house.
James A. Cameron	" 9,	" hive.
A. S. Layton	" 9,	" "
R. P. Buttles	" 9,	" "
J. C. Gaston	" 16,	" "
G. J. Flansburg	" 16,	" "
James P. Praul	" 16,	" "
Peter Miller, Jr.	March 23,	" feeders.
J. J. & A. J. Frey	" 23,	" hives.
G. W. Umbaugh	" 23,	" "
T. F. McCafferty	" 30,	" "
Ole Osmundson	April 20,	" "
James H. Crandell	" 20,	" "
Jno. E. Finley	May 4,	" "
Chas. E. Spaulding	" 11,	" "
Thomas Atkinson	" 11,	" "
N. B. Sebring	" 18,	" "
R. B. Starbuck	" 18,	" "
J. B. Farquhar	June 1,	" "
M. Easley	" 1,	" "
James M. Robnett	" 1,	" "
J. H. Bassler	" 8,	" "
E. B. Redfield & E. C. Hubbard	" 15,	" "
H. Berix	" 15,	" "
Jno. E. Finley	" 15,	" "
Solomon Stevens	" 15,	" "
Geo. Calvert	" 22,	" "
D. G. Watt	" 29,	" "
Jos. Croner	" 29,	" "
J. A. Paddock & J. S. Estep	July 6,	" "
S. Vreeland	" 20,	" "
G. A. Robinson	" 27,	" "
H. Filsom	" 27,	" "
M. Graham	" 27,	" "
R. S. Torrey	Aug. 3,	" "
Richard Pearson	" 3,	" "
Thos. Atkinson	" 10,	" "
Saml. B. Crawford	" 10,	" "
D. Collum	" 31,	" "
H. M. Dunham & B. Addington	Sept. 7,	" "
H. H. Flick	" 21,	" "
E. N. Shedd	" 21,	" "
L. H. Critchfield	Oct. 5,	" "
H. O. Peabody	" 26,	Centrifugal machines for extracting honey from the comb.
D. Burbank	Nov. 9,	Bee house.
G. W. Lowery	" 9,	Bee hives.
Riley Sanford	" 23,	" "
Jewell Davis	" 23,	Hives for raising queen bees.
W. A. Elam	" 23,	Bee hives.
R. P. Buttles	" 23,	Bee moth instrument.
H. O. Peabody	Dec. 7,	Centrifugal machines for extracting honey from the comb.
Peter Campbell	" 14,	Bee hives.
W. T. Kirkpatrick	" 14,	" "
Thomas L. Gray	" 21,	Miller trap for bee hives.

[For the American Bee Journal.]

Bees North and South.

1. In what latitude in the United States does the bee do best—that is, collect most honey, and of the best quality?

2. Why will bees not collect more honey in the South where the season is longer, than in the North? I have the general impression that their instinct to store honey south, is only for their present wants—that is, they do not lay up stores for winter as in the north. Is this so?

3. Why is it that the largest apiaries in the United States are north of latitude 40°—such as Quinby's, Grimm's, Marvin's and others? Will those who have experience in different latitudes answer through the BEE JOURNAL, and oblige.

West Groton, N. Y.

D. H. COGGSHALL, JR.

[For the American Bee Journal.]

Italian Queen and Alsike Clover.

For the benefit of the public generally and the encouragement of M. J. H. Townley, of Tompkins, Michigan, I would say that having dealt largely with him in the purchase of Italian queen bees, I am satisfied that they are bred from the purest and most reliable stock in the United States, being second to none. I have purchased also from various other breeders, all of whom have pure stock, but have not been more satisfactory served by any than by Mr. Townley.

I have also bought from him more than a hundred pounds of Alsike clover seed, out of which I sowed eighteen acres, selling the balance to my neighbors—all of whom pronounced it to be the genuine article, free from any foul seed whatever.

As Mr. Townley is strictly honest and very prompt in dealing, orders sent to him will no doubt be properly filled, and purchasers find that they have made a good investment.

O. E. WOLCOTT.

Byron, Mich.

Antonine the Martyr, in the seventh century, speaks of the honey of Nazareth as being most excellent; and in the present day, bees are extensively cultivated at Bethlehem, for the sake of the profit derived from the wax tapers supplied to the pilgrims.

[For the American Bee Journal.]

A Cheaper Bee House.

MR. EDITOR:—I have just been reading the January number of the *Bee Journal*. I think Novice's bee house is so expensive that very few persons will be induced to put so much money in so small a building. My brother and I built one last fall, ten feet by twenty-one inside measurement, eight feet high in the cellar part, with shelving to contain one hundred and twenty stocks of bees, and a shed overhead six feet high in the clear, in which to store out empty hives, caps, &c. The entire cost of it was less than twenty-six dollars. We did all the labor ourselves. We have now in it more than one hundred and twenty colonies of bees, in tip-top condition.

The past season was the poorest ever known in this part of the country. More than half the bees will starve to death. Natural swarming commenced very late, and after the 15th of July I do not think the bees gathered as much as they used from day to day.

I swarmed my bees artificially, and as soon as the pasturage failed I stopped. We increased our stocks about one-half, and have had the largest share of surplus honey that has been taken in this county. We use the shallow form of Langstroth's hive. I have examined several hundred stocks, in different styles of hive, this fall, and have found none that are near as heavy as those in the shallow form.

HENRY S. WELLS.

Lisle, Broome Co., N. Y.

[For the American Bee Journal.]

Experience with Foulbrood.

Several years ago I purchased two stocks of Italian bees of a man in the State of Maine, for which I paid him forty dollars. They were in Langstroth hives. I opened both hives after I received them, as I was anxious to know what kind of a bargain I had made. On removing the top board I detected a peculiar smell, such as had never come in contact with my olefactory nerves before. Although I had never seen a case of foulbrood, I at once pronounced the two hives infected with this disease.

It was then early in the month of June, and I let the bees work, to see what would be done. I examined them every day, to ascertain how the disease was progressing. The stench grew more intolerable, as the disease spread in the combs. I did nothing the first year to check it from spreading. Early the next spring, I opened my hives, to see if the disease was still there, and of course found that it was, and quite as much so as ever. Very little brood was to be seen, and all my stocks showed unmistakeable signs of being foulbroody. I now commenced to experiment, and every comb containing brood was removed, the brood cut out and buried deep in the ground, and new combs that contained no brood were given to each hive. In a short time these combs had brood in them, and were likewise infected; and so I went through with the same operation of cutting it out; and towards the latter part of summer no brood hatched out at all—my stocks being so badly infected.

I know of but one way to cure this disease, and I *strongly* advise others who are troubled with this malady to adopt my remedy, namely—destroy all the hives, combs, and everything about the apiary that came in contact with the foulbrood. I melted all the combs, and burned all my hives, and had a thorough cleaning out of everything that would induce the disease to return. I then purchased a new stock of bees, hives, &c., and have not seen any traces of foulbreed since.

That this disease is so contagious as some writers allege, I do not believe. One of my neighbors had at that time fifty hives of bees, and none of them were more than twenty rods distant from mine; yet not one of his stocks was infected. Perhaps some bee-keepers will not agree with me so far as burning the hives, but I am certain that this is the cheapest and surest way in the end.

My experience with foulbrood cost me about two hundred dollars, and I am not sorry that I had something to do with it. Should it again make its appearance among my bees, I know just what to do, in order to subdue it; but I do not expect ever to see anything of the kind again.

H. ALLEY.

Wenham, Mass.

☞ We entirely concur with Mr. Alley in advising the immediate and complete destruction, by fire, of hives and combs, after suffocating the bees with the fumes of brimstone, whenever a colony is found infected with foulbrood. This should be done in every case, unless perchance the owner is disposed to avail himself of the opportunity to study the disease, and is in a location remote from all other bees. This, of course, will be a rare case, and in every other we advise a prompt resort to the *ordeal by fire*.

The character of this disease is now probably undergoing a more thorough scientific investigation than ever before; and it is to be hoped that an efficient remedy will, ere long, be devised, fully tested, and then given to the public "without money and without price."

[For the American Bee Journal.]

The Toad.

MR. EDITOR:—As almost all the principal issues in the science of apiculture have been pretty well discussed through the columns of the JOURNAL, books, &c., there seems but little left about which to write. But, as is often the case, one gets his curiosity as fully gratified in the "side show" as under the main canvas; and, as "variety is the spice of life," we propose for a moment to look in upon the performance in the "smaller rig."

In nearly all the books on apiculture we have a chapter treating on the enemies of bees; and, amongst others, the toad comes in for his share of "blessings." Now, to this we object. In our humble opinion the toad is one of the most harmless, yet useful, assistants we have. But some one says "his very looks ought to condemn him."

Not too fast, friend, lest we prove too much. Truly he has not much whereof to boast. If noble origin is to be taken into account, it must be confessed that his parentage is most humble. But why banish him on that account? How often do we find the richest kernel enclosed in a rough shell, or a manly, loving heart beating under a tattered waistcoat!

It has been said, and forcibly, too, that "an ounce of prevention is worth a pound of cure;" and now if we can use our hero as an assistant against known and acknowledged apial enemies we surely have gained another point, and shall save from banishment an humble occupant of a nook in our domain—one which, by the way, has the same right to "life, liberty, and the pursuit of happiness" as a great many bipeds who not unfrequently ape the characteristics of a certain quadruped. But this is going away from the point. The question is, can the toad be of use in apiculture; and if so, how?

That the moths are among our worst enemies no one doubts; and if any plan can be devised to extirpate them partially or entirely it will be hailed with pleasure. And that our hero is fond of Madam Bee is certain; also, that he is partial to moths, ants, bugs, &c. Now, if it be possible to prevent him from seizing the former, and allow full scope to his propensity to capture the latter, he certainly will redeem himself from reproachful aspersions. That he was created to be of service in the world, and that a part of his duties are to assist the apiculturist, we feel quite certain. We know, too, that he is a special friend to the horticulturist, destroying myriads of insects that prey on his cherished productions. And from the fact that he is frequently found in proximity to Madam Bee's domicile, and knowing his predilection for small game, can we not secure his services by simply placing a wire fender around the entrance of hives, and then allowing him full range of the premises? Place your hives near the ground, and the pedestal will form a good retreat for him during the heat of the day, and when "still evening" comes on you will find him on hand, and alert as a trusty sentinel. Let your bottom boards be wide enough to allow a seat by the side of or beneath your colonies, and he will make short work of the moth that attempts to deposit her eggs under the edges of the hive.

And now, as friend Quinby hands him over to the judge with a "recommendation to mercy," I will assume that officer's functions *pro tem.*, and charge the jury to bring in a verdict of—"*Zeke, you let that wood-chuck go!*"

J. W. BARCLAY.

Worthington, Pa., Jan. 12, 1870.

In some occasional cases, where the nectarium of the flower is not perceptible, if the spur of such a flower, which usually becomes the depository of the nectar that has oozed from the capsules secreting it, be too narrow for the entrance of the bee, and even beyond the reach of its long tongue, it contrives to attain its object by biting a hole on the outside, through which it taps the store.

[For the American Bee Journal.]

Maple Sugar for Bees.

As I was thinking of Mr. Langstroth's recommending sugar candy for bees, to feed them in the absence of honey, the thought struck me that maple sugar might be as good a substitute. Accordingly I took some small cakes of it, as they were prepared in the spring when the sugar was made, and placed them where the bees could get to them and cluster thereon. They immediately collected on it and commenced eating, as a flock of hungry hens would attack a pile of corn.

I am feeding quite a number of colonies on pure maple sugar. I do not mean the black stuff that is generally made in caldrons, which I have seen so black that you could not tell it from the muck in the swamps. I should think such stuff (for stuff I should have to call it) would be poor food for bees. But sugar made in sheet-iron pans, as we make it, is far superior, and my bees seem to devour it with insatiable appetite. Sugar can be made much purer in sheet-iron pans than in iron cauldrons or kettles. My bees seem to be doing well on it up to this date, (Jan. 1, 1870,) and I think it will prove to be as good feed as sugar candy. In fact, in one sense of the word, I think maple sugar is candy.

As this is a new experiment with me, I should like to have other bee-keepers who see this, and have bees to feed, to try the maple sugar, and report results through the BEE JOURNAL. I fear there are many colonies that need feeding, as the decrease in colonies next spring may show. I am well pleased with the BEE JOURNAL, and would not be without it for twice its cost.

D. H. COGGSHALL, JR.

West Groton, N. Y.

[For the American Bee Journal.]

Non-swarming and Queen-catching.

Great efforts are being made to secure the control of queens, in order to control the swarming of bees. For evidence of the supposed importance of having such control, I need only refer to the many efforts being made by different individuals to attain it.

Mr. Quinby says: "First and most important, I want to control swarming and to prevent it—not by giving extra room and then guessing they will not swarm. I want to be certain." See AMERICAN BEE JOURNAL, April, 1869, page 184.

No one knows better than Mr. Quinby that a swarm will return to the parent hive, unless attended by a queen. May I, through the JOURNAL, tell him and all the readers of that excellent medium, of a little contrivance for catching queens, whether at swarming time or any other when it is desired to catch one.

I have no interest whatever in the trap, except such as may be in common with any bee-keeper who may use one; but having used one two seasons, I feel confident in referring to it as a desirable thing for any one who wants to catch queens for any purpose.

This trap is about three inches wide by nine inches long, and is made by Mr. V. Leonard, of

Springfield, in this (Bradford Co., Pa.,) upon the principle spoken of by Mr. Langstroth, page 174, third edition of "*Hive and Honey Bee.*" It is true that this trap will not catch a queen unless she goes into it; but at swarming time she will do this in attempting to go out of the hive with the swarm, the trap being placed at the entrance. And no bee-master will be at a loss for ways to cause her to attempt to go through at almost any time when it is proper to open a hive. If the queen can be seen at once on the combs as we handle them, there is no better way than to catch her with the fingers. But if, as is often the case, especially in populous colonies, she keeps out of sight, the trap makes sure work of it, if we place it at the entrance, and shake the bees from the combs in front of the hive. They will return to the hive through the trap, and if the queen is among those shaken off, she will be caught in her attempt to return, and can be disposed of as you please.

With this trap all after-swarms can be made to return; and then queens, whether one or many, can be caught and used as you please. Drones being larger than workers or queens, are excluded by the adjustment.

It will be seen from this that when a swarm is on the wing, the queen of which has been caught in the trap, if you remove a parent hive and set an empty one in its place, the swarm will return to the place whence they came, and finding the queen there caged, will enter the new hive of their own accord. The swarm may then be set elsewhere, and the parent hive returned to its former place, if you so choose.

P. PECKHAM.

Columbia Cross Roads, Pa., Jan. 14, 1870.

[For the American Bee Journal.]

Two Queens in One Hive.

In opening some hives to-day, (Jan. 6,) I was much surprised to hear piping from one of them, to which I had given an Italian queen about the middle of September. I supposed that the queen I had then introduced was dead, and that the bees had raised another to supply her place. But, on taking out the first frame occupied by bees, I saw a young queen, perfect, able to fly, or to do anything else required from a young queen; and on the next frame I found the old queen, looking as well as possible. Both this frame and the next had considerable brood, just hatching; and nearly in the middle of the one on which the old queen was, I saw the cell from which the young one had just been hatched. Everything appeared to be ready for swarming, and had it been at the proper season, I should have supposed that the presence of two was caused by the old queen's inability to fly, and her consequent detention till the young queen was hatched. But, as it is, it is all mystery to me. If any of your readers has observed anything like it, I should like to hear from them, as I can see no reason for bees wishing to supersede a queen, which, to all appearance, is perfectly healthy and not six months old.

Bees have not done well here the last two seasons—last being very short. We had not over fifteen day's good weather in June and July, and if the bees had not stored honey as fast as bees ever did, in those days, they would have fared badly this winter. But, as they are all old stocks, they are wintering well. Many late swarms, however, will die if not fed. I doubled all mine at swarming time, and they are all right, while those not doubled are short of honey.

I have been troubled with skunks last fall and fore-part of winter, trying to get at the bees or honey, or both, by digging under the ends of the hives and scratching about the entrance, thus keeping them in an uproar—sometimes all night.

I have generally had best success in introducing queens in October, but found it did not work this year, as the bees would hardly accept them after being caged ten days.

How many stocks can be kept in one place, when white clover is abundant, with considerable locust, whitewood, basswood, &c?

Three years ago I obtained from one colony $37.50 *worth of honey, and a good swarm of bees.*

E. M. JOHNSON.

Mentor, Ohio, Jan. 1870.

[For the American Bee Journal.]

The Italians and the Blacks.

MR. EDITOR:—I saw an article in the December number of your valuable BEE JOURNAL, page 120, headed, "COMMON BEES AND ITALIANS." What I have to say in regard to that article is this:—I have had the Italians and the natives both in one apiary for the past five seasons; have paid equal attention to both, giving each the same style of hive, same management, &c., throughout each season, and have decided thus: *First*, in good seasons for honey-gathering, both do well. *Second*, in seasons like the one just past, as it has been with me and many others, the natives have all they can do to gather sufficient stores for wintering, and yield no surplus; while the Italians gather sufficient for wintering, besides giving a surplus of from twenty to seventy-five pounds per hive. *Third*, in certain locations, in seasons like the past, when there was no honey to gather, neither kind can do well. *Fourth*, the only correct way to give the Italians a fair trial is to keep both in the same apiary, in the same style of hive, and with the same kind of management for a number of years in succession, and then compare the result of each season. Where this has been done, I do not know of a single instance where the decision has not been highly in favor of the Italians. There are bee-keepers in my neighborhood who have heretofore stated that the Italian bee was a mere speculation, carried on by a few individuals only, such as Mr. Quinby, Mr. Langstroth, Mr. Stratton, Mr. Cary and myself, or a few others; and that only those capable of rearing the Italian queens were the chaps to derive profit from the Italians, all others paying dear for the whistle, and so on. This was the general talk among inexperienced bee-keepers in my vicinity, from the first introduction of the Italians until the year 1867. Since that time their conversation has changed somewhat in favor of

the Italians. The past season has convinced many of their superiority over the natives, which gave no surplus, when the Italians, in the same apiary, yielded twenty pounds and upwards, besides ending the season with larger stores for wintering. This I find to be the case generally throughout my neighborhood, and in many other localities where the season was such as it was here. In fact, the Italians proved their superiority over the natives every season since I had them in my apiary; and in the past one gave me several swarms and a goodly quantity of surplus honey. The natives, on the contrary, gave me neither swarms nor surplus honey—proving almost a total failure as regards profit. As for myself, I keep bees for profit, as many others do. Then why not keep the kind that bring us the greatest income for the same care and labor bestowed, and same capital invested? This is my motto, and I shall continue to cultivate the Italian bees as decidedly preferable.

P. J. SEVERSON.

Knowersville, N. Y.

[For the American Bee Journal.]

Bee House.

MR. EDITOR:—As you have adopted the very liberal policy towards the bee fraternity, of letting every man who has made, or fancies he has made, an improvement in any department of apiculture, publish a description of it in your journal, I desire to avail myself of your liberality to describe an improvement in BEE HOUSES, for which Letters Patent No. 96,668, were issued to me November, 9th, 1869.

You and your readers are aware that the best manner of wintering stocks of bees, and also reserve queens, are two objects to which bee-keepers have of late devoted much attention. I have been studying to solve the same problems.

The design of my improvement is to furnish a good and cheap means of wintering bees on their summer stands, (and of wintering reserve queens,) without sacrificing the convenience of separate hives, for performing the various operations required by the most advanced system of apiculture. It consists of a square box with an entrance for bees in each side, to contain four hives of any description in use. I prefer the Langstroth hives, using the shallow forms with two sets of frames to obtain honey in frames; and the brood chamber of Henry Alley's "New Style Langstroth Hives," (cut of which appears in the Bee Journal, Vol. 5, page 54,) for obtaining box honey. The bottom is made of two thicknesses of pine flooring with a space between, filled with any non-conductor of heat. The top is made in the same way, (of thinner material, to make it light,) and shaped like the roof of a house. The walls consist of inch boards lined with several thicknessess of roofing paper or anything else that may be preferred. The house is divided horizontally into two sections of about equal depth. The upper section is on hinges, so as to open like a chest. The seam between the two sections is made air tight with listing or rubber. Openings for ventilation are provided through the floor and roof. Around the inside, about two inches above the floor, is nailed a narrow strip on which rest boards fitting close to the hives and forming a second floor, which may be permanent or removable according to convenience. If I used a hive having honey boxes placed on the sides, I would make it removable, otherwise permanent. The object of this is to give free circulation of air around the entrances of the hives but exclude it when desired from the upper chamber till it has passed through the hives and been warmed by the bees. This upper chamber is the most important feature of the house. When the weather is unsuitable for bees to fly, the lighting boards are made to turn up and close the entrance perfectly tight and dark. Then the warmth arising from four stocks of bees is combined in the upper chamber and retained by proper adjustment of the ventilators, so that no signs of frost or dampness appear in the coldest weather.

This chamber also furnishes a very convenient place for wintering reserve queens in nucleus boxes. It is better to winter the nucleus stocks if it can be done conveniently, because it saves the trouble and loss of breaking them up in the fall and making them anew in the spring. These boxes may be made with openings in one side, corresponding to the openings in the hives for the honey boxes. When the honey boxes have been removed in the fall, the nucleus boxes can be set in their places, with wire cloth to keep the bees from passing. Thus they will not only have the benefit of the genial warmth of the chamber, to which they each will contribute a share, but they will have a current of warm air direct from the hives. Each house will easily keep in this way sixteen reserve queens, four to a hive; enough probably for all practical purposes. But if the boxes are made eight inches long, seven inches wide and nine or ten inches high and set two tiers deep, thirty-two can be accommodated.

The dimensions of this bee house are forty to forty-two inches square and twenty-four to twenty-six inches high, inside measure. It can be furnished, with four hives containing ten frames each complete for $25. This includes a good lock to secure its contents against thieves, the most dangerous *foul brood* we have to contend with in this State.

D. BURBANK.

Lexington, Ky., January 6th, 1870.

[For the American Bee Journal.]

Query Respecting Drones.

Are drones capable of fertilizing queens, if raised from an unfertilized queen, or from a qeeen past the power of laying eggs which will hatch into workers?

J. L. H.

January, 1870.

Experiments made by the Baron of Berlepsch show that drones produced by fertile workers are virile, and it may hence fairly be inferred that those above referred to are so likewise. There may still be a question as to the quality of the progeny.

[For the American Bee Journal.]

Worker Comb changed to Drone Comb and Vica Versa.

As Mr. Dadant thinks that the fact of the bees changing drone cells to worker cells, as communicated by Mr. Marvin and Mr. Alley to the BEE JOURNAL might "throw some light on the determination of sex in the eggs of bees;" it may not be out of place to state that during the past season I had two instances in which the bees done just the reverse, and changed worker cells into drone cells.

The first was by a colony of black bees that I transferred from a large box hive, and having plenty of straight worker comb in it, I filled every section (or frame) with only worker comb. I was particular to exclude the drone comb, because I did not wish to raise black drones. About the last of May I noticed a large number of drones in the hive, and as I had been so particular to put no drone comb in it I was surprised. I opened the hive and the first shut I examined had a patch of drone comb on it as large as my hand and there was nearly as much on four others. The cells were full size, four of them measuring an inch

I examined them closely, after cutting it all out, and found that the walls were composed of a mixture of old and new wax. Without further proof I might have concluded that I was mistaken, but on closer examination I found that the foundation had not been disturbed and had the regular size and angels of worker cells. The drone cells were built on it, the bees paying no attention to the original plan of the foundation, the new cells frequentiy including a part ot the foundations of four old ones.

The second instance was also in a colony of black bees, from which all drone comb had been taken and its place filled with worker comb, and as it was on the sheet of comb next to the glass and paralled with it I had the privilege of seeing it done. The whole sheet was of worker comb, and, with the exceptions of a small spot of brood, was full of honey and capped over. The first thing I noticed unusual was that the bees were removing the honey from one end. By the next day they had removed the honey from about one fourth of the sheet and had cut away most of the cells down to the foundation and had commenced building up the drone cells. In two days more the job was completed and every cell had an egg in it.

A neighbor of mine, Mr. T. M. Newman, had an instance, last season, of drone comb being used to rear workers. He had taken new white drone comb and transferred it to a section honey box, filling all the sections. He placed it on a newly hived natural swarm. The queen established her brood next in it instead of the brood chamber, and when I saw it, it was full of worker brood. I did not examine the comb closely, but think that the cells were cut down and rebuilt and not filled up funnel shaped as in Mr. Marvin's instance. The queen finally went below and when the brood was all out of the comb the bees filled it with honey.

In the second instance above, I had, a few days before added a half inch section to the brood chamber, as the bees had built the comb so near the glass that there was not room enough to build full length worker cells. This extra room was taken advantage of to rear drones, as it was perhaps the only place in the hive that they could have done it without cutting down the opposite cells.

In the first instance no doubt more space was left, in transferring, between the sheets of comb, than could be filled by worker brood comb.

D. L. ADAIR.

Hawesville Ky., Jan. 1870.

[For the American Bee Journal.]

Straight Combs.

Quinby says the bees did not work straight in sectional hives, and a writer in the last Journal says he could not make them build straight with the corner of frame up. The reason is obvious. Short frames involve too many fractional cells, and too near the brood nest. If two combs are started at one frame, they turn one or both to avoid these, and make the range as long as they can. A prime swarm will present the edge of the comb to the fly hole, for free passage and ventilation and the longest breadth of cavity to favor compact construction. In a circular cavity, the side combs narrow and convex, they leave the side combs with going away from the heat. With flat brood side combs, they must go farther from the heat, which is not natural; so they gather in center and perish. Angular frame tops are a want of heat and space. One strip of comb stuck to the top bar of frame secures a straight comb in most cases. They cut off most of these, because they cannot enter the fractional cells, but use the impressions left for the new foundation. A small swarm will build across the cavity presenting the side of the comb to the fly hole, to protect themselves from cold. In square hives with short brood combs in a corner, fencing in their work with thick store combs, sometimes turned at right angles, varying their action with circumstances. They have fought the stupidity of man for ages. Lately I found where two small swarms had been taken, the cavities were narrow in both cases, and extended several feet above and below the fly hole, the bees being in each case just above the fly hole. Upward ventilation is right in winter, but wrong in summer, cannot have both naturally; therefore cannot succeed. This is human authority.

F. H. MINER.

Lemont, Ill.

Many plants could not be perpetuated but for the agency of insects, and especially of bees; and it is remarkable that it is chiefly those which acquire the aid of this intervention that have a nectarium and secrete honey.

[For the American Bee Journal.]

Alsike Clover Again.

In the December number of the Journal for 1869, page 125, there is an article from Mr. Adam Grimm, on Alsike clover. It seems from it, that he is not very favorably impressed with this clover, as a honey-yielding plant, in the vicinity of his home apiary. The conclusion he has arrived at, however, is quite different from what mine would have been, under the circumstances. He says he and his neighbors sowed fifty pounds. Sowing four pounds per acre, this would be twelve and a half acres; but we will call it thirteen acres. He says further, "it commenced blooming about the 5th of June, and remained in bloom till the 25th of July." And, still further on, "after examining about a dozen hives every day, during the whole season, I could never discover more than about a hundred cells with a very thin, watery honey."

We have no means at hand of ascertaining the exact number of colonies Mr. Grimm had in his home apiary at the time these examinations were made; but by referring to the Journal, Vol. 5, No. 2, page 35, we find that he had three hundred and sixty-two colonies the spring previous, before any were sold. How many were sold, Mr. Crowfoot does not state (he bought forty colonies), but we will suppose that sixty-two colonies were disposed of. It would be fair to presume that the increase in stock would equal the number sold; but we will leave them out of the account, and suppose that Mr. Grimm had, in round numbers, at the time his examinations were made, just three hundred colonies. The number of worker bees in a good colony is variously estimated at from 25,000 to 50,000. Some writers estimate the number much above the figures here given; but, as we wish to be moderate, preferring to be below the actual number rather than above it, we will call it 30,000. Supposing that one-half of them remained in the hives, while the other half were out on the Alsike, there would be 4,500,000 bees at work on his thirteen acres of clover—equal to 346,154 bees per acre, or 2,163 per square foot. Some twenty years ago there was a gentleman living in Jackson, Michigan, by the name of Chapman. He had been a judge and also a member of the Legislature. A neighbor, living several miles from Jackson, who in addressing another is apt to give him all the honors he is entitled to, had occasion to ask a favor of the judge and wrote to him, addressing the letter to the "Hon. Judge Chapman, Esq." He sent his son to Jackson with the letter. The judge took it, read the direction, and looking up at the boy said—"the deacon has *spread it on rather thick*, hasn't he?" Well, it is somewhat so with Mr. Grimm's Alsike clover, the bees have been spread on there *rather thick*. If the weather was not as wet in Wisconsin, in June and July, as it was here in Michigan, raining almost every day, and he was able to find any new honey in the cells at any time, though ever so thin and watery, I think it speaks wonders for the Alsike clover.

I have now thirty acres seeded to this clover. I had intended to sow only sixteen next spring; but since reading Mr. Grimm's article, I think I will not only sow the rest of the farm, 100 acres, with it, but will also give all the seed to my neighbors that I can induce them to sow. If three hundred swarms of bees can collect and store honey enough in each hive, to make a show from thirteen acres in such a season as the past has been, what will thirteen swarms of bees do on three hundred acres in a good year? NOVICE'S vision of rows of jars of honey miles in length, is tame in comparison.

In conclusion, I think if friend Grimm would reduce the number of colonies in his home apiary from three hundred to sixty or seventy, he would find that, in good years, they would collect *some* honey from *white* clover if not from Alsike, even in his poor locality.

One word more about the Alsike clover. Bees will always be found in the greatest number where honey is the *most abundant;* and during the time my Alsike was in bloom, it was alive with bees, (not quite eight to the square foot though,) on all fair days—which, by the way, were like some visits we read of "few and far between." If I remember rightly there were here only eight days in June without rain, and July was a continuation of the same subject, without any perceptible improvement, and the only wonder is that anything in the shape of honey was stored at all, let alone its being thin and watery. Honey from the Alsike is not more watery, however, than that collected from white clover.

J. H. TOWNLEY.

Parma, Mich.

[For the American Bee Journal.]

Artificial Pasturage for Honey.

MR. EDITOR:—I see in the BEE JOURNAL various statements of surplus honey obtained this year in different sections of the country, and am induced to send you mine. This is the first year since I engaged in bee culture that I tried to obtain honey.

My apiary contains forty-five stands of bees, old and young, and I have taken two thousand three hundred and thirty-nine pounds of surplus honey. All this is the product of bees gathering on *artificial pasture*. I live on a very new place six miles from any timber, and there is no white clover, except what I have sown. I have sown white clover, alsike, and melilot. Of all these, the melilot produces the most honey, and the best. My bees gathered honey from it this fall up to the 5th of October. I sowed three acres for my bees, and also some buckwheat.

The above stated yield was the product entirely of artificial pasturage. My bees are all hybrids, and my honey was all box honey. Of my two best stands, No. 5 gave one hundred and seventeen pounds, and No. 26 gave one hundred and eleven pounds. This, I think, is doing pretty well for a new beginner. My hives are all numbered, the honey all weighed, and each hive credited with the amount taken from it.

R. MILLER.

Rochelle, Ill.

[For the American Bee Journal.]

What Caused our Bees to Die?

The summer of 1868 was unusually dry, more so than any for the fifteen years previous. Clover yielded little honey; but on carrying in the hives they were of fair weight. In February the bees commenced dying in cellars, attics, bee-houses, and on their stands, with occasionally an exception of a colony that nearly escaped. Almost all the bees in this vicinity were lost. The winter was unusually long; and many, say one-tenth, of the surviving colonies died on their stands in May and June, after being carried out. My Langstroth hives weighed from sixty to eighty-five pounds each on the 2d of September, when my first (heavy) swarm died. From that time they emptied their combs with great rapidity, and covered them, as also their corn cobs and hives, with their loathsome evacuations, and died, still leaving more or less honey—some as much as thirty pounds.

My hives were then in a bee-house or cellar in a hill side, rather damp, though well ventilated. Fearing the damp air might aggravate the difficulty, I removed my bees to my house cellar, which I ventilated by means of a stove pipe running through the ceiling and connecting with a main pipe in the rear of a stove, thus giving the bad air a continuous circulation and draft through the chimney in the attic.

We have had more rain than snow so far this winter, and my cellar is damp. The corn cobs mould some. The mouths of the hives are open; honey boards off; caps raised half an inch for ventilation; still the cobs are too moist.

Did our bees die with dysentery? If so, what caused it? Could it have been prevented? Will they be likely to suffer from the effects of the old honey which was put in for the new colonies, eight or ten pounds to a hive, at swarming time?

Is comb ruined by mould under ordinary circumstances? Should it be cut out?

Would it be better in my case to take off the caps entirely from my hives where the mercury is kept up at 40°, leaving only the corn cobs for protection? or will the escape of heat prevent the bees from breeding? Some think it is as well for them not to breed much until the honey season approaches; but my stocks are now deficient in bees.

The last season was unfavorable, being very wet, with cold nights. We had an abundance of white clover, but it produced very little honey. My bees collected most of their stores from a patch of Alsike clover, which was thronged constantly while in blossom. I have no seed to sell, all of mine being burned in my barn. I consider this clover invaluable for hay and honey, and hope to see it raised extensively. O. C. WAIT.

West Georgia, Vt., Jan. 1870.

Instinct indicates to bees and other insects their enemies, and the wrong these may intend, and shows them how they may be repulsed or evaded.

Honey is a very favorite food and medicine with Bedouins in Northern Arabia.

[From the Western Farmer.]

The Bee-Comb Guide Patent — How a $500,000 Law-Suit was Managed.

In a telegram sent from Madison, Tuesday evening, Jan. 6, it was stated that a Bee-Hive case, said to involve $500,000, had been tried in the U. S. Circuit Court in Madison, the plaintiff being K. P. Kidder, the defendant M. Trask.

Some facts concerning this case; how it was brought and how it was managed, we propose giving the public, as in the question at issue thousands of bee-keepers in all parts of the country are directly interested, and the estimate of the amount involved, given above, is probably not too high.

The question is simply whether a certain patent, granted to one George H. Clark in the year 1859, giving him the right to control the putting of triangular shaped sticks (or a bevel edge) in bee-hives to serve as comb guides for the bees, is a valid one. The parties principally interested in proving the invalidity of the patent are Messrs. Langstroth & Son, the proprietors of a patent hive in which this comb guide is used, and of which many thousands have been sold. Mr. Langstroth, senior, claims that he invented the device in February, 1852, that he made and sold a large number of hives, with this triangular guide, in 1853, and that, in 1854, before it had been in public use two years, he applied for a patent on it. He also claims that subsequently an application for a patent on the same device was made by Mr. Clark, and an interference between the claims was declared. Before this matter was decided, it is claimed that a gentleman in Illinois made an application for a patent for the same invention, and an interference between the three claims was declared, and that the Commissioner finally decided that none of the applications would be allowed—as an English work had described substantially the same device. Mr. Clark, who claimed a prior invention, kept secret, renewed his application, and in 1859, after it had been rejected several times, secured a patent.

This is, in brief, the claim of Langstroth & Son, except that they additionally claim that Mr. Clark having originally applied for a patent on this sharp edge in connection with *bars*, the use of it in connection with movable frames as in the Langstroth hive is not covered by this claim. The Langstroths have persistently used this device, and the agents of Mr. Clark, or his assign Mr. Kidder, continuing to claim that this use was an infringement on the Clark patent, they issued a circular in 1867, cautioning the public against paying any fees for such use, and expressly guaranteeing all purchasers from them against any costs or damages awarded by the courts.

It will be seen from this history that the question is one to be decided by the courts, and that it is in a high degree desirable that it should be fairly tried and definitely settled. That it was not so tried in the suit referred to above; that it was a case of collusion between the plantiff and defendant; that the counsel for the defence was

not furnished with all the facts in the case, we think is clear.

The case was brought by K. P. Kidder as the assignee of Clark, against Mr. Trask. The case was not a calendered case; the papers were filed on Jan. 3, and the first opportunity the public had of knowing there was such a case was when it was called for trial, Jan. 5. Mr. J. R. Bennett appeared for the plaintiff, although the name of U. S. Senator M. H. Carpenter appears as one of the attorneys, and we understand, the case was really managed by one May.

Mr. Gregory, of the firm of Gregory & Pinney appeared for the defendant. He stated to the court that it was an agreed case: that he had only just been retained and had not had time to investigate it; that he felt it due to the court and himself that these facts should be known before he would consent to try the case. And here we wish to state that we believe Mr. Gregory acted in good faith; that he believed the full case had been furnished him and that it was brought as an amicable suit to settle a disputed point—in other words we believe he was deceived. While we think it to be regretted that he allowed himself to try a case of the kind without more full personal investigation, we do not for a moment believe he acted in a way that the strictest sense of honor would not approve, with the light he then had. He is an able, widely known and deservedly esteemed attorney.

We do not understand that Senator Carpenter appeared at all in the case, and from what we know of Mr. Bennett we do not believe he was a party to any deception. We know nothing of Mr. May.

Several witnesses appeared for the plaintiff, a hive was shown, and the case was evidently well prepared on that side. No witnesses appeared for the defence, and we understand the only evidence offered on that side was a copy of Langstroth's original patent, in which there is no reference whatever to this device. The defence, as we have heard it reported, consisted mainly of an ingenious and able attempt to prove that the device was not patentable, and that its use here was in consequence of the discovery of an instinct of the bees, which discovery was not patentable.

Seeking for that which, had he known all the facts in the case he would have not needed to have sought, we understand that Mr. Gregory asked each witness if he had known of any use of this device before the date of the Clark patent, 1859, and that each testified that he had not. If this be true we can explain such an answer by no satisfactory supposition.

The case went to the jury, who returned a verdict for the plaintiff, awarding him damages for the use by the defendant of the Langstroth frame with this triangular comb guide

No one, we suppose, claims that the defendant expected or wished to gain the case. We are informed he has used the "Kidder Hive" for years, and has defended his claim. He stated, soon aiter the close of the case, that he had expected to lose it, and thought he ought to.

The plaintiff was in our office for an hour on Jan. 4, and again on Jan. 5, but the first intimation we had of the case was after it had been decided, on Jan. 6; although, when we were so informed, it occurred to us that we had heard of it, and we so informed the plaintiff. A gentleman interested in the defence was informed by a prominent witness for the defence, the morning the case was called, that it would not be tried. A "remarkable coincidence" is found in the fact that Mr. Kidder, when he first called at our office, asked if we had received the January number of the American Bee Journal, and on being informed that it had just arrived, but that we had not yet read it, asked for it; carefully read a minute statement in it by Mr. Langstroth of his claim; asked permission to take the paper with him for a day; took it; returned next day, and asked permission to keep it another day, and finally returned it within an hour of the rendering of the verdict. This copy was probably the only one in the city. It may have comported with his sense of honor to sit through the trial of an agreed case, where it was understood that all the facts were presented, with this statement of the claims of the defence snugly stowed in his pocket.

Another very singular circumstance was that, very soon after the decision, we were called upon by two gentlemen and requested to publish a "report" of the trial, which was read to us—most of it having obviously been written before the close of the trial. We were gravely informed that, as the case was one of much importance, and as they had noticed we were not at the trial, they would like to have us publish this "report," and that the writer of it had no interest in the case. We stated that we would publish it and would call editorial attention to it. This we do by stating that its author has been for years an agent for Mr. Kidder; was a prominent witness for him in the case; has asked persons to settle with him for the use of this device; that his name is not the one signed to the report, and that the whole thing is a very clumsy attempt to produce a false impression.

We can conceive of no profit which Mr. Kidder hopes to accomplish by his course, that will prove it wise for him to have taken it. He cannot suppose that this decision will be quietly allowed to stand. The case, we repeat, is one for the courts to decide, and we do not attempt to say which claim ought to be allowed, but we would refuse to pay for infringement in the use of this device, until the case had been fairly and fully tried; and it certainly was not so tried in this suit, and our faith in the strength and rightfulness of the plaintiff's case is certainly not strengthened by the course he has pursued in relation to this trial.

[For the American Bee Journal.]

A Request.

MR. EDITOR:—I propose building on the surface of the ground, for winter use, a bee house large enough for sixty stands. I wish to know the best plan for ventilating, and also the proper size of ventilators. Suggestions based on experience or experiments will oblige.

JOHN CLARKE.

Liberty, Ind.

[For the American Bee Journal.]

Novice's Metextrator.

MR. EDITOR:—We thought we gave directions sufficient before, but have received so many inquiries on the subject that we have concluded to to try again.

We would say here, however, that we have no idea that our machine is the best that ever was made; but we do think it is superior to the *wooden* machines about which several correspondents have had so much trouble in boring *large* holes through small sticks. Having the machine made all of metal we certainly think it is cheaper, and if your readers could all take a look at ours, we fear they would laugh at its simplicity. They would certainly not find trouble in getting it together.

Well, any tin-smith can make you a can or tin tub, twenty inches high and twenty inches across the top, or, if that does not suit your frames, then of any dimensions you like. Cut out two pieces of wire cloth (fine or coarse, as you prefer, will answer,) about half an inch larger than your frames, all round. Take white galvanized iron wire, so that it can be soldered readily; the kind used so extensively for white wire clothes lines, about an eighth of an inch in diameter, is just the thing. Bend this wire so as to run around your pieces of wire cloth close to the edge, and solder it at about every inch or two. These two frames of wire cloth are to be attached to the *shaft in the centre*, so as to revolve as near the outside as they can conveniently without any danger of touching it. They should stand the longest way up and down, with the side the wire is soldered on next to the sides of the can. To fix them in that position, take two pieces of the same wire, thirty-five or forty inches long, bend each of them in the middle around the shaft near the bottom, so as to leave the four ends sticking out like the spokes of a wheel. As your shaft is iron you can solder them firmly in place. Fix four more similar arms near the top. Now turn the ends of the arms around in a curve so as to solder on the back side of the frames, one to each corner, and it is all ready to spin. The bearings to the shaft you can fix as you like. We made the bottom bearing by soldering a piece of sawplate in the centre of the bottom, and a blank iron nut on top of that, so it turns very easy, and there is no danger of wearing a hole through. The top is a thick piece of wood, notched in for the sides of the can, and a hole in the centre for the shaft. For convenience in taking out and putting in the frame, the piece is made quite narrow only, at the ends. We think a crank on the top of the shaft would give speed enough, although we use the gearing of a common apple-parer.

We forgot to mention that some bearers will be needed to keep the frames from sagging with heavy combs. These are easily made by soldering a wire from each of the four lower corners to the shaft, where the upper arms are fastened. Put a wire cloth across the bottom if you wish it; it is very handy to lay broken combs on. If the wire cloth should be too light, put another wire across the middle. Of course the comb must be turned as soon as one side is emptied.

We consider it much less trouble than taking off the boxes, and have sold readily all we could get, for twenty-five cents per pound. We would rather furnish it at twelve and a half cents per pound, if we could get no more for it, than box honey at twenty-five cents. Boxes are among "the things that were" with NOVICE.

January, 1870.

[For the American Bee Journal.]

Multiplication of Colonies.

Several correspondents are anxions to know what I think of NOVICE's increase of colonies the past season, and some of them appear to doubt the truth of his statements. Now, it certainly would not answer for me to doubt their truth after all my experiments in that line.

When I first came here I obtained a swarm of bees which the person from whom I procured them supposed were entirely worthless. I wintered them through, and early in April I transferred them to one of my hives, that is, I transferred enough comb to fill two frames, the remainder being worthless. I soon found that the queen was old and almost useless for breeding, and she had very little over a quart of workers with her. However, by stimulating and coaxing, I succeeded in getting the hive filled with combs and bees by the 20th of July. I used to carry them in and set them near the stove at night to keep up warmth, and carry them out in the morning. On the 20th of July I received an Italian queen from a friend in Wisconsin. I removed the old queen and one frame of brood from the hive; introduced the Italian queen; raised five queens; superseded the old one, and made four swarms. All were large and strong, with one exception, which had only six combs. All this was down after the 20th of July, by keeping up the temperature of the hives by covering at night, or carrying them in to the stove when it was cool, and by feeding whenever the bees could not gather enough. All of them wintered well.

You will see that taking a worthless swarm and increasing it to five, was fully equal to, if not more than Novice accomplished the past season. With the same care and attention I could have taken a good strong swarm and increased it to fifteen, easier than to do what I did with the miserable poor one. The reason for starting with such a swarm was, that I could get no other, and I moved that one more than forty-five miles in February.

This matter or question of increase there can be no doubt about when rightly understood. A great many people attempt a large increase without understanding the true principle of increase, and therefore ruin the whole—original stock and all. If a person has a few good stocks to begin with, and can obtain the comb already built, I consider such comb equal to a swarm; that is, if I have comb sufficient to fill the hive. Of course the comb would be of no practical value without bees.

I repeat that a queen can be made to breed to any desired extent by proper management, providing she is a good one, and if she is not a good one she ought to be replaced by a good one as soon as possible, whether your object is increase of stock or surplus honey. E. GALLUP.

Osage, Iowa.

THE AMERICAN BEE JOURNAL.

WASHINGTON, FEBRUARY, 1870.

A change in our arrangement for publication may delay the appearance of this number a few days, and constrains us to retain till March several articles intended for its pages—among them some interesting communications from old correspondents.

We feel assured that it will be gratifying to its friends to hear of the steadily increasing patronage of the AMERICAN BEE JOURNAL. At no time since it was commenced has its subscription list grown so rapidly and largely as within the past month; and flattering evidence of the warm interest felt in its success by intelligent disinterested beekeepers, is constantly reaching us from all parts of the Union, the British provinces, and Europe. As we have ever scorned to resort to clap-trap and humbug to extend its circulation, may not claim, to some extent at least, that

"The force of its own merit makes its way?"

while we fully appreciate and gratefully acknowledge the aid and countenance received from many long-tried and steadfast friends.

We have received the tenth or concluding part of Dr. Packard's "GUIDE TO THE STUDY OF INSECTS." The work is now completed, and const tutes a popular introduction to this important branch of natural his ory, such as has long been needed.

The second volume of Adair's "ANNALS OF BEE-CULTURE," or that for 1870, we understand, may be looked for early in the spring.

Many practical beekeepers are of opinion that pollen is indispensably necessary for bees during winter, but experiments have shown that all the essential operations of the colony may proceed from October to May, fully six months, though the hive do not contain a particle of pollen. It seems certain, nevertheless, that ordinarily bees do consume it in all the winter months, excepting November. Dr. Donhoff, when analyzing the contents of the viscera of bees, found traces of pollen therein at all times, except in November. Communicating this fact to Prof. Leuckart, the latter said it was corroborated by his own independent observations. Shortly thereafter, however, the Professor discovered that the mucous tissue lining the stomach and intestines of bees, undergoes decomposition or is sloughed off annually, and renewed, in the interval between the latter part of October and the beginning of December, corresponding precisely with the period in which the consumption of pollen is pretermitted. Hence the non-use of pollen during the interval results, probably from the abnormal condition of the insect at the time.

After much delay in its transit, we received by mail, from Mr. H. M. Thomas, of Brooklyn, Canada, a package of Alsike clover hay, showing its condition and quality as fodder, after the seed has been removed by threshing. We referred the subject to an appropriate *cow* committee, by which it was thoroughly discussed, evidently *cum gusto*—ending in a very intelligble *motion* for more; but, deeming eager manducation and deglutition a satisfactory *report*, we discharged the committee without awaiting further *rumination*.

We publish on another page a complete list of the patents on beehives, &c., issued during the year 1869, for which we are indebted to Mr. Grinnell, Chief Clerk of the Patent Office. The number is large, nay, considering how ancient, wide-spread and common is the pursuit to which they relate, it may be regarded as very large. We apprehend however, that the sanguine expectations of most of the inventors are doomed to disappointment: for according to our observation, patents on beehives and cognate contrivances, like those on velocipedes and bouquet-holders, are not profitable investments. About nine-tenths of them, being based on exploded notions or misconceved theories, prove to be practically failures; and of the comparatively few that are really new and useful, the miserable crew of infringers and modifiers speedily contrive to divert the emoluments from the original and meritorious patentee. The inventor of a truly new and useful device certainly deserves the protection and remuneration which a patent is intended, but usually fails, to secure; but at this advanced period in the history of bee culture, and in view of the improvements made in the last thirty years, he must be a genius indeed who contrives and constructs a hive of preëminent and permanent value. It is sheer folly to rush to the Patent Office in hot haste to secure a patent for every whim-wham that strikes the fancy of one laboring under a paroxysm of "bee on the brain." Better far, save your money and charitably suppose that others also may have had the same or similar ideas, and have tested, or be testing their value, though the Chiefs of the Patent Office are unaware of the fact. Obtaining a patent is the smallest part of the affair. Time, labor and money are required to introduce it, more time and money, must be spent, and much annoyance and vexation endured, in litigation with infringers; and if in the end you succeed in establishing your *rights*, it generally proves to be an empty and bootless victory.

We received a few day ago, per mail, from Mr. Henry Alley, Wenham, (Mass.) an Italian queen bee and about a dozen workers. They were caged and provisoned as Mr. A. usually prepares them for transmission by mail in the summer, with some special protection from cold. When first opened they were somewhat sluggish as bees are when clustered in the

hive in winter, but they quickly revived.—It thus appears that queens may be safely sent in this manner in cold weather; though it is rather difficult to preserve and properly dispose of them when received at this season.

We copy from the "*Western Farmer*" an account of how matters were managed in the "triangular comb guide" case recently tried in the U. S. Circuit Court at Madison, Wis.; from which it will be seen how mere a sham the whole suit was. The decision will probably be used to frighten timid or ignorant parties into paying for the use of the "guide," though we do not believe that suit will be brought against any who refuse to pay and show a determination to resist and bring out the facts.

We shall next month publish an extract from a paper read by Dr. John Hunter before the Royal Society in 1782, showing that the use of such a guide was known to him, and published to the world, three-quarters of a century ago.

Correspondence of the Bee Journal.

INDEPENDENCE, Mo., Dec. 17, 1869.—The season in this part of the country has been only moderately favorable. Up to the 5th of August there was too much rain; but from that on the bees did very well. We had an unusually good crop of white sumac, and a very heavy one of fall bloom. Colonies gave from twenty to sixty pounds surplus. Bees unattended to suffered much from the *moth*. Many persons lost all they had, whilst those who gave their bees proper attention, obtained a handsome profit.

As I did not give you my age, &c., with my photographs, I will now give it. I am a native of the State of Tennessee; born in Sumner County, in September, 1819; removed to Jackson County in 1839; am a practical mechanic (builder and joiner,) have been experimenting with bees eighteen years, and have now about 130 stocks in good condition.

In view of the advantages that may be derived from comparing notes, facts, and practical results. I would suggest that the *bee-keepers* of the United States hold an annual meeting, at some convenient point, in the interest of bee-culture alone; and that such steps be taken as will secure the attendance of inventors with all the different models of hives, that the practical utility of these may be investigated and facts noted which will be advantageous to the public, shielding them from impositions that bring reproach on men who are honestly endeavoring to advance science and remove the superstitions that have so long enslaved the minds of those who have been imposed upon. St. Louis, in this State, is about as near central as any other point, and the State Fair will come off in October next; and as all the railroads leading into the city are accustomed to giving half-price fair tickets, for ten days, during the time of going to and returning from the fair, I would suggest that as the time and place of said meeting.

JAMES D. MEDDOR.

NEWBURY, OHIO, Dec. 18.—Bees have done but little here the past season, and very few bees are kept. I am just starting in the bee business, with only three swarms in Langstroth hives, which I purpose to Italianize as soon as possible in the spring. I should like to know through the Journal, if any have tried lining hives with paper as a non-conductor and absorbent; and if so, what success they have had with it.

J. L. WAY.

NEWTON, OHIO, Dec. 18.—Bees have done poorly with us through this season, not having swarmed much, and many of the young stocks are short of stores. I removed only about 1000 lbs. of surplus honey from my colonies, which should have given me five times as much. They are in good condition for winter, as I doubled all my young swarms, so that they are all right and wintering finely.

E. M. JOHNSON.

BLOOMFIELD, IOWB, Dec. 18.—Bees did but little in the way of storing honey this season, up to the first of August; but from that time till the frost killed the blossoms we had a continuous honey harvest. Some stocks cast swarms as late as the 1st of September, which filled their hives with nice rich honey. My stocks (swarms included gave me 41¼ lbs. each,) of box honey. Each stock went into winter quarters rich in stores and strong in numbers.

I would like to know if any of the readers of the Journal have tried introducing a queen into a full hive, about swarming time, to induce natural swarming. If so, I should like them to give us the benefit of their experience through the Journal.—J. P. FORTUNE.

ST. CATHERINES, ONTARIO, Dec. 24.—I find that I cannot get along without the Bee Journal; and as it costs me fifty cents a month for tobacco, I think I will shut down on the "pernicious weed," and expend the money in Bee Journals.—O. FITZ WILKINS.

WAVERLY, IOWA, Dec. 24.—I find in the December number, page 118, of your excellent Journal, that your correspondent, W. C. Condit, wishes to have reports from those who have tested the method of introducing queens by the use of grated nutmeg. I find it works like a charm. I tried it with six queens last season, very successfully indeed; and henceforward I shall do away with the caging process.

The past summer was very poor for honey, though one of my hybrid stocks gave me a good swarm and sixty pounds of box honey. I do not think that the black bees average five pounds of surplus honey to the hive, in this country, the past season. Some of my neighbors are feeling finely, whose apiaries are five miles distant from my Italian bees, on finding that some of their young queens are giving them workers with two yellow bands. This speaks well for the Italians in this part of the west. I use the Langstroth hive.

Enclosed please find two dollars, for which send the American Bee Journal to J. H. C. of ——, Jasper County, Mo. I send it to him as a New Year's present, as he is a beeman; and I advise your readers to go and do likewise—sending the Journal to some friend who will enjoy it as well as the rest of us.—H. K. LOVETT.

NEW CUMBERLAND, W. Va., Dec. 25.—I enclose in this letter two dollars, and wish you to continue sending me the Bee Journal for the coming year. I like the principle on which it is conducted. The various writers give us many practical experiments in the cultivation of the honey bee. We can see all over the States what bee-keepers are doing, and where there is a good location or a bad one. I see the honey product varies from place to place, almost every year; but it has come a little hard on us here. We have had two bad seasons in succession. The summer, a year ago, was so dry and hot that nearly all the white clover and the red was killed. This year, the season being wet and cold, the secretion of

honey was very limited in all flowers. We had very few swarms of black bees in this county. Most of the Italians swarmed, and made some surplus box honey. —A. CHAPMAN.

WEST POINT, IOWA, Jan. 1, 1870.—I am well pleased with your Journal. I do not think I could do without it, for I find something of interest in every number; so that I think it has well paid me for taking it. I have now twenty stands of bees; fourteen of them are Italians. Bees have done very well here last summer.—C. WHITLOCK.

NEWBURYPORT, MASS., Jan. 3.—I bought a swarm of Italian bees, about one year ago, and this was my first experience in bee-keeping. Of course I felt myself incompetent to manage them successfully and made inquiry for some work on the subject and learned of your Bee Journal. I at once sent for it, and am satisfied that no man ought to keep bees without it. I did not get it in season to learn how to set them to breeding as early as they ought, in order to have a strong swarm when the honey season came in; and then, too, it has been a poor season for honey. Near the coast we had cold nights and easterly winds much of the time; and were it not for the fact that my bees did much better than any other in Old Essex, I might be discouraged. They did not swarm, but I took, in boxes, forty pounds of honey. I took them to the county fair, and there obtained the first premium of four dollars. There were three or four old bee-keepers present, with their experience and new style of hives, and friend Alley with the rest. All said their bees did nothing this year, and we must try again and see who will win. By the way, I am about to make a hive, different, in some respects, from any I have yet heard of. After I have proved it, I will report what success.—D. T. BATCHELDOR.

GONZALES, TEXAS, Jan. 2.—My bees are doing very well, and are very rich. They made me seven hundred pounds of honey last summer. I could have taken more, but concluded to let them have an ample supply, as I want to increase my stock. I expect to send to Kentucky in the spring, for a patent hive. —L. W. COCHRAN.

ILLIOPOLIS, ILLS., Jan. 12.—Bees have done better in this section of the country the past season than for several seasons previous. From ten hives I had an increase of twenty, and seven hundred (700) pounds of surplus honey. I am much pleased with the Journal, and think every bee-keeper ought to take it. —G. BOUGHTON.

RED OAK JUNCTION, IOWA, Jan. 3, 1870.—Bees have done extremely well in this part of the country. Some strong Italian stocks have given as high as 240 lbs. of choice surplus honey. Most of it was extracted with the "Honey Extractor" except that gathered from the Golden Rod, which was so thick and adhesive that it would not separate from the comb, forcing comb and honey together through the screening, under a fast motion.—The average yield of all my Italian stocks, for the past season, was 143 lbs. 4 oz. Most of the surplus not consumed by the family, was sold at home, the balance in Red Oak Junction—all at 40 cts. per. pound. Who can say: bee-keeping does not pay better than any other occupation.—To keep bees without your Journal, would be like keeping bees without the movable comb.—E. KRETCHMER.

RICH VALLEY, MINN., Jan. 3.—I get little sympathy here on the subject of bee-culture, from people in this section, though they watch my operations with interest. They seem to regard such new-fangled inventions as movable frames and honey-emptiers as entirely beyond their comprehension. I am but a novice at the business myself (am twenty-three years of age) and my experience dates back only three years. I have never bought any patent hives or Italian bees, and was first interested on the subject by reading Mr. Langstroth's great work, which I believe to be the best book on bees extant. Two years ago I bought a few stocks of bees in box hives; and have since constructed several hives for my own use, with Langstroth frames, twelve inches in length by eight in depth, (what would Gallup say of them, for this climate?) I think that it would be almost impossible to winter bees in them, on their summer stands, here on the prairies. But in the cellar it is easy, with upward ventilation. Unless that is given, the comb speedily become mouldy, the bees become uneasy and their abdomens distended with a watery excrement; and they leave their hives whenever a light is taken into the cellar. But with plenty of ventilation at the top of the hive, I have not lost a single colony of those wintered in the cellar. When bees are active and at work in the summer season, they keep up a constant circulation of the air through their hive; but when clustered together for warmth in winter, they have no means of doing this. Hence the need of upward ventilation to let the moisture of their breathing escape from the combs and hive.

Last spring I constructed a honey-emptier—getting a tin can made as described by Novice, and making the other parts myself. It cost me about five dollars. But instead of the iron shaft and gearing, I made the centre shaft of wood, with the top end rounded, so that it could be turned with a cord, as described by J. L. Hubbard. But I soon found the cord a nuisance, for by rolling the rounded end of the shaft between the palm of my hands, I could give it the proper motion easily enough, and empty the combs from two of my small frames in a few seconds after they are placed in the machine. Such an operation greatly astonished the old fogies about here. However, though greatly increasing the yield of honey, I found that the honey thus taken would not bring as much in the market, by ten cents in the pound, as box honey—the latter selling at 30 cents, and the former at 20 cents. Nevertheless I think a great deal of my honey-emptier for family use.

And now, Mr. Editor, accept my good wishes for the Journal. If there are two objects that American bee-keepers should be proud of, they are Rev. L. L. Langstroth, and the American Bee Journal.—L. M. LINDLEY.

[For the American Bee Journal.]

Cheap Paint for Hives.

As it is time for making hives, and they need some paint, if it is intended that they should be durable. White lead paint is considered a poor article for such purpose. What is needed is some cheap and good substitute, and one within the reach of every bee-keeper. Can any one furnish a recipe in the BEE JOURNAL, for the benefit of all its readers?

D. H. COGGSHALL, JR.

West Groton, N. Y. January 7, 1870.